Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #656 - May 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	42H3	Bursting Strength (Mullen), 42 lb Linerboard
206	52J1	Bursting Strength (Mullen), 52 lb Linerboard
215	42H3	Ring Crush, 42 lb Linerboard
216	52J1	Ring Crush, 52 lb Linerboard
223	42H3	STFI, 42 lb Linerboard
224	52J1	STFI, 52 lb Linerboard
228	42H3	Roughness - Stylus Method, 42 lb Linerboard
229	42H3	Roughness - Sheffield Method, 42 lb Linerboard
231	42H	Internal Bond, 42 lb Linerboard
234	42H	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42H	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
35# Linerboard	35E3	June 2022 - Current
	35E2	June 2020 - April 2022
42# Linerboard	42L1	June 2023 - Current
	42H3	November 2022-October 2023
52# Linerboard	52J1	November 2023 - Current
	56G2	May 2021 - May 2022

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
3VN9GX	515.8	-1.39	44.95		555.4	-0.66	29.24	4	LG
6NHZ7M	612.0	0.72	38.08		613.8	1.02	4.58 L	4	EX
77EZEY	601.3	0.49	38.08		612.5	0.98	8.82	4	LO
9LZCVX	563.6	-0.34	31.40		564.6	-0.39	27.79	4	EX
A37WAF	626.9	1.05	37.97		595.1	0.48	24.64	4	LS
AVMT2D	571.5	-0.17	20.53		809.8	6.67 X	264.37 H	4	LG
DQH2JQ	609.0	0.66	32.60		569.1	-0.27	29.88	4	EX
E36RJL	561.4	-0.39	28.24		563.3	-0.43	7.43	4	ER
EUE8F9	685.6	2.34 *	28.47		697.3	3.43 X	9.11	4	LS
G73TY9	555.9	-0.51	33.63		580.3	0.06	31.92	4	ET
HXFMDL	568.8	-0.23	45.96		569.7	-0.25	8.37	4	ER
JYU9MM	535.6	-0.96	30.60		547.6	-0.88	12.58	4	EX
KZLEQK	563.2	-0.35	45.94		565.7	-0.36	27.71	4	LM
MWU8D2	591.8	0.28	16.12		570.5	-0.23	25.52	3	LG
MWWR9G	547.0	-0.71	48.58		560.3	-0.52	22.55	4	ER
MX3JTH	606.6	0.60	20.28		623.7	1.31	15.82	3	EX
N8MARE	580.4	0.03	38.32		575.9	-0.07	35.40	4	LM
NGCYP3	685.3	2.33 *	29.10		665.0	2.50 *	31.80	4	ER
PCZAP7	585.7	0.14	32.08		599.0	0.60	18.85	4	LG
QWJPND	606.0	0.59	22.86		582.7	0.12	31.22	4	ES
T3YWG2	495.6	-1.84	71.04		515.7	-1.80	39.03	4	LL
THVBGV	578.1	-0.02	75.29 H		524.4	-1.55	54.23	4	TB
UKGFPT	555.8	-0.51	51.90		592.1	0.40	25.61	4	LS
VKCE3X	577.1	-0.05	8.47 L		577.7	-0.02	9.76	4	LG
XMD3UT	593.3	0.31	28.17		633.6	1.59	56.88	2	LG
ZFH3D4	578.0	-0.03	24.76		581.4	0.09	8.21	4	ER
ZPQLRT	486.5	-2.04 *	26.58		519.0	-1.71	34.55	4	LG

Consensus (All Labs) Results

Month Mean	579.19	Grand Mean	578.32
Avg SD	38.11	Avg SD Months	28.29
SD btwn Labs	45.48	SD btwn Labs	34.71
Labs Incld	27	Labs Incld	25

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	555.58	43.31	23.60	9
Clip sealing	585.44	36.94	6.25	17
Staple sealing	685.32	0.00	106.13	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

Containerboard Interlaboratory Testing Program

Analysis 202

Edgewise Compressive Strength, by T811, Corrugated Board - EC16

TAPPI Official Test Method T811

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3VN9GX	50.1	0.60	1.61		49.1	0.43	1.45	3	EX
6NHZ7M	45.9	-0.60	4.58	H	48.8	0.34	2.90	3	LC
7MGMVZ	48.6	0.17	3.45		48.6	0.26	0.00	1	LC
A37WAF	48.4	0.12	2.85		47.2	-0.15	1.41	3	LD
A72MFR	145.5	28.08 X	7.57	H	150.6	31.05 X	5.67 H	3	LD
BXPNLG	54.7	1.95 *	1.76		53.7	1.80	1.18	3	XX
CEA2AT	45.9	-0.60	1.82		43.1	-1.38	2.62	3	TS
CQYXCQ	49.6	0.47	1.45		49.6	0.58	0.00	1	LD
JYU9MM	48.4	0.12	1.30		47.5	-0.07	0.82	3	LC
LBWGGB	40.7	-2.09 *	2.52		43.3	-1.33	2.22	3	TS
MWWR9G	46.1	-0.55	4.87	H	43.4	-1.29	2.35	3	EN
VXXRE9	49.4	0.40	1.72		50.4	0.82	2.33	3	XX

Consensus (All Labs) Results

Month Mean	47.97	Grand Mean	47.69
Avg SD	2.81	Avg SD Months	2.04
SD btwn Labs	3.47	SD btwn Labs	3.31
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
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
3VN9GX	49.2	-0.37	1.65		48.1	-0.53	1.11	3	LY
4VMH23	56.8	1.46	2.23		56.8	1.71	0.59	3	TG
6AXHBX	47.9	-0.69	2.57		48.2	-0.49	1.08	3	TD
6NHZ7M	51.4	0.15	2.27		51.9	0.46	2.09	3	LC
77EZEY	45.7	-1.22	3.12		45.2	-1.26	0.41 L	3	LD
A37WAF	47.7	-0.73	1.61		46.3	-0.98	2.03	3	LD
ALX3FL	59.1	2.02 *	1.69		52.6	0.65	5.73 H	3	TU
AVMT2D	46.8	-0.95	1.10		47.4	-0.70	0.69	3	EM
BMJ7MJ	56.2	1.31	1.81		54.6	1.16	1.98	3	TH
CEA2AT	46.5	-1.02	2.42		44.2	-1.53	8.03 H	3	TS
DQH2JQ	50.4	-0.09	2.43		48.9	-0.32	1.34	3	LD
DQWPKH	47.1	-0.88	2.37		46.7	-0.89	0.63	2	BU
E36RJL	50.1	-0.16	2.82		49.7	-0.11	0.89	3	EM
EUE8F9	59.5	2.12 *	2.17		59.0	2.28 *	0.92	3	EM
G73TY9	52.9	0.51	1.45		50.2	0.01	2.34	3	TD
GNH3ZA	50.5	-0.06	1.40		53.1	0.76	2.26	3	EM
HXFMDL	48.2	-0.61	2.02		47.2	-0.75	0.87	3	LD
J6F2Z9	55.9	1.26	2.24		52.2	0.55	3.54	3	TE
J84NEG	51.3	0.13	1.38		50.4	0.07	0.88	3	LD
JYU9MM	54.5	0.91	2.81		54.5	1.13	1.21	3	LC
K84WZL	34.0	-4.05 X	3.05		34.0	-4.15 X	0.00	1	XX
KZLEQK	49.0	-0.41	2.17		46.4	-0.95	3.86	3	EM
LA6KRG	43.1	-1.84	2.37		41.7	-2.18 *	3.06	3	IX
LBWGGB	43.2	-1.82	1.25		45.1	-1.28	1.93	3	TS
MWU8D2	45.5	-1.26	2.34		45.3	-1.23	0.32 L	3	EM
MWWR9G	47.1	-0.88	1.44		48.1	-0.51	0.91	3	EN
MX3JTH	52.6	0.46	0.96		53.8	0.96	1.72	2	CT
N8MARE	53.0	0.55	2.02		50.4	0.07	2.89	3	TG
NGCYP3	52.3	0.37	1.79		54.4	1.10	1.90	3	LD
QWJPND	53.3	0.62	2.12		51.6	0.37	2.73	3	LD
RWG4TX	55.3	1.10	0.84 L		56.4	1.62	0.99	3	LC
THVBGV	51.1	0.09	0.59 L		50.8	0.17	1.23	3	LD
UKGFPT	45.8	-1.21	1.97		47.5	-0.67	2.47	2	EM
VKCE3X	53.7	0.72	0.88		53.3	0.81	0.41 L	3	MK
VXXRE9	49.0	-0.42	1.90		50.2	0.02	2.85	3	XX
XMD3UT	53.2	0.59	1.17		52.1	0.51	1.04	3	BU
ZFH3D4	51.8	0.25	1.71		50.1	-0.02	1.72	3	LD

Consensus (All Labs) Results

Month Mean	50.74	Grand Mean	50.11
Avg SD	1.96	Avg SD Months	2.45
SD btwn Labs	4.13	SD btwn Labs	3.88
Labs Incld	36	Labs Incld	36

Key to Instrument Codes Reported by Participants

BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EN	Emerson 2200
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
TH	TMI Monitor/Compression Tester, Model 17-76	TS	TMI Digital Crush Tester, Model 17-56
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42H3

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
2Z47PU_AL	121.6	124.0	128.3 *	116.4	122.6	1.46	10.5	5.0	119.5	0.98	9.5	4.7	8	AL
3E4HGY	121.8	117.4	118.6	121.8	119.9	0.89	7.1	2.2	117.5	0.46	6.7	6.7	16	LA
3JVLB3_AL	121.9	119.1	124.5	120.6	121.5	1.23	10.0	2.3	122.3	1.73	8.9	2.2	16	AL
3VN9GX	122.4	124.8	124.0	126.4	124.4	1.84	10.2	1.7	122.8	1.85	9.1	4.0	16	AX
4D3Q34_AL	118.5	111.6	119.5	113.6	115.8	0.02	8.3	3.8	115.6	-0.05	9.9	3.1	16	AL
4YZHYU	110.3	105.2 *	111.7	108.7	109.0	-1.42	8.7	2.8	111.9	-1.01	8.6	2.9	16	LC
63H2JN_AL	115.3	107.9	108.1	102.6 *	108.5	-1.53	7.0	5.2	109.0	-1.77	11.8	4.1	16	AL
66KZUG	117.1	122.7	122.6	123.5	121.5	1.22	9.6	3.0	118.6	0.76	9.7	2.8	16	LC
66KZUG_AL	123.9	117.9	114.6	116.8	118.3	0.55	8.6	4.0	119.1	0.88	9.5	2.5	16	AL
6RXVJY	116.2	121.8	118.3	112.5	117.2	0.32	10.9	3.9	117.2	0.38	10.9	3.9	4	XX
9G96DP	118.2	120.2	117.2	114.7	117.6	0.40	8.8	2.3	116.4	0.16	8.3	4.6	16	TB
9KND2P_AL	123.2	123.9	125.8	120.9 H	123.4	1.63	13.0	2.0	123.3	1.98	*11.6	3.5	16	AL
A37WAF	114.8	113.8	110.8	125.6	116.2	0.11	10.1	6.5	115.5	-0.06	10.5	3.9	16	LA
A72MFR	103.7 *	104.3 *	106.4	102.8 *	104.3	-2.41 *	9.7	1.5	103.5	-3.23	X 9.2	2.6	16	LA
AGLUEG	103.5 *	128.7 *	132.1 *	131.7 *	124.0	1.75	8.1	13.8 H	129.1	3.51	X 9.5	8.3 H	16	AX
DLLFUA	115.9	114.3	115.0	114.8	115.0	-0.15	4.7	0.7	115.1	-0.19	5.5	1.1	16	TP
DQH2JQ	114.4	114.4	112.0	112.8	113.4	-0.49	5.8	1.2	112.5	-0.86	8.7	3.5	16	AH
EPJDFL	121.1	121.0	119.0	119.7	120.2	0.96	7.3	1.0	117.5	0.44	8.4	2.8	16	XX
ETZK4L_AL	114.4	118.9	No Data	119.8	117.7	0.42	9.2	2.9	117.1	0.34	9.4	2.8	12	AL
EV8ZBR_AL	119.3	114.9	112.7	114.1	115.2	-0.10	9.1	2.9	118.9	0.83	8.9	3.9	12	AL
F42HBL	116.5	115.0	114.4	112.7	114.7	-0.22	8.9	1.6	117.7	0.50	9.7	2.2	16	LB
FV33FL	115.3	115.0	116.0	115.7	115.5	-0.04	5.3	0.4 L	114.9	-0.23	6.2	1.2	16	LJ
GAD4PG_AL	115.2	113.2	118.7	111.9	114.8	-0.20	9.4	3.0	116.3	0.15	9.5	3.8	16	AL
GJ2UCA	118.8 L	118.5 L	118.7 L	118.7 L	118.7	0.63	3.1	0.1 L	119.6	1.02	3.6	1.8	16	AH
HVVBZB	111.2	112.9 L	111.1	117.4	113.2	-0.54	11.2	2.9	112.7	-0.81	9.5	2.9	16	XX
HXFMDL	111.8	110.8	113.1	106.6	110.6	-1.09	9.6	2.8	110.3	-1.44	9.7	3.4	16	LZ
J6F2Z9	120.3	112.1	115.5	114.4	115.6	-0.03	9.6	3.5	117.3	0.39	10.4	2.3	16	LC
JQ2VQU_AL	114.0	116.2	115.4	110.8	114.1	-0.34	9.9	2.4	114.2	-0.42	9.5	3.0	16	AL
JYU9MM	114.0	115.8	114.0	107.3	112.7	-0.63	10.3	3.7	112.9	-0.74	9.4	3.0	16	AH
KH3NRL	120.1	118.5	120.8	120.3	119.9	0.89	9.3	1.0	118.0	0.59	9.7	2.5	16	LA
KH3NRL_AL	111.8	115.8	114.4	115.4	114.3	-0.29	5.4	1.8	116.8	0.26	7.7	2.4	16	AL
KWLF8E_AL	119.5	114.9	118.1	114.4	116.7	0.21	6.9	2.5	116.8	0.26	8.8	3.7	16	AL
L6778C_AL	113.9	118.0	102.8 *	117.9	113.1	-0.54	8.5	7.2 H	114.0	-0.45	12.1	4.1	16	AL
LEYER4	115.6	115.9	115.1	115.9	115.6	-0.02	5.2	0.4 L	115.4	-0.09	5.1	0.5 L	16	LA
ML934G	124.0	118.7	122.8	119.0	121.1	1.15	11.6	2.7	120.9	1.36	10.9	3.0	16	LJ

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42H3

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
MRGKKH	112.1	115.7	107.6	111.3	111.7	-0.85	7.8	3.3	113.8	-0.51	9.3	5.6	15	ME
MX3JTH	120.5	121.0	117.0	116.0	118.6	0.62	10.6	2.5	118.5	0.71	10.3	3.6	12	XX
NGCYP3	113.3	115.9	109.7	111.7	112.6	-0.65	7.1	2.6	115.5	-0.08	8.4	3.5	12	LA
NPQKY7	108.7	113.6	116.8	112.1	112.8	-0.62	6.3	3.4	111.0	-1.26	5.8	2.9	12	XX
P83TCC_AL	116.5	120.1	120.8	116.7	118.5	0.60	7.6	2.3	117.6	0.49	9.4	3.7	16	AL
PFK3Z9	110.3	111.2	106.7	113.7	110.5	-1.11	8.2	2.9	110.8	-1.30	8.5	3.0	14	LJ
PFK3Z9_AL	126.5 *	123.5	124.9	126.7	125.4	2.05 *	7.3	1.5	123.9	2.14 *	9.8	3.1	14	AL
PVEH9F_AL	116.2	115.3	113.5	110.0	113.8	-0.41	8.3	2.8	115.8	0.02	9.5	3.0	10	XX
QN9CN9	111.7 L	114.8	114.0 L	112.8 L	113.3	-0.51	3.2	1.4	112.4	-0.88	4.1	2.0	16	LA
QPZ9C3	110.0	109.9	111.5	114.1	111.4	-0.92	6.8	2.0	111.9	-1.02	9.1	3.6	16	LA
QWJPND	114.6	116.4	109.3	115.4	113.9	-0.38	10.9	3.2	114.5	-0.34	10.6	2.9	16	LA
RE2VRW_AL	112.7	110.4	110.0	108.8	110.5	-1.11	10.2	1.6	112.9	-0.75	9.7	3.3	16	AL
RZWY7A	116.0	No Data	118.0	No Data	117.0	0.27	5.6	1.4	117.6	0.48	6.1	1.3	6	AX
RZWY7A_AL	106.8	No Data	108.9	No Data	107.9	-1.66	9.7	1.5	108.7	-1.86	8.8	7.1	5	AL
THXWDB	115.0	110.9	114.8	107.8	112.1	-0.76	8.5	3.4	110.1	-1.48	8.9	4.1	16	LC
VFFQLQ	116.6	116.1 L	115.8	115.4	116.0	0.06	4.7	0.5 L	115.7	-0.01	5.8	1.0	16	AH
VXJ9UB	123.5	124.8	134.3 X	125.6	127.0	2.39 *	10.5	4.9	122.2	1.69	9.5	5.8	12	LJ
VXXRE9	115.6	118.8	117.0	110.2	115.4	-0.07	6.2	3.7	114.6	-0.30	7.6	2.4	16	LC
XR6AD2	116.5	113.6	121.0	114.9	116.5	0.17	10.1	3.2	115.3	-0.12	10.1	3.3	16	LA
Y4TVW2_AL	106.0	109.6	113.6	110.6	110.0	-1.21	8.4	3.1	109.7	-1.59	6.7	2.3	12	XX
Y89DY6	114.2	117.6	123.2	No Data	118.3	0.56	6.2	4.5	120.0	1.11	6.4	3.1	9	AH
Z3FLJV_AL	104.4 *H	112.1 H	104.4 H	101.6 *H	105.6	-2.13 *	18.9	4.5	107.6	-2.15 *	17.8	4.7	6	AL
Z4T7B6	101.3 *	101.0 X	100.3 *	101.8 *	101.1	-3.09 X	4.9	0.6	111.3	-1.17	8.9	7.4 H	16	LZ
ZFH3D4	116.1	116.4	113.8	119.0	116.3	0.13	8.7	2.1	117.8	0.53	8.7	2.8	16	AH
ZULDX4	115.9	115.1	114.7	115.8	115.3	-0.08	9.7	0.6 L	117.5	0.45	11.1	2.7	16	LC

Consensus (All Labs) Results

Wk Mean	115.34	116.15	115.50	114.91	Month Mean	115.71	Grand Mean	115.76
Avg SDr	8.33	8.52	9.07	9.42	Avg SD	8.88	Avg SD	9.20
SD btwn Labs	5.40	4.85	6.19	6.23	SD btwn Labs	4.73	SD btwn Labs	3.80
Labs Incld	60	57	58	57	SD btwn Wks	3.48	SD btwn Wks	3.56
Labs Excld	0	1	1	0	Labs Incld	59	Labs Incld	58
Labs not Rcvd	0	2	1	3				

Key to Instrument Codes Reported by Participants

AH	Perkins Model AH	AL	L & W Autoline 400
AX	Perkins Mullen Tester (model not specified)	LA	L&W Bursting Strength Tester
LB	L&W Burst-O-Matic	LC	L&W Autoline (205 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 52 lb Linerboard - 52J1

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
2Z47PU_AL	118.8 *	110.2	115.0	111.8	114.0	1.21	9.8	3.8	114.0	1.33	9.8	3.8	4	AL
3E4HGY	111.9	115.2	109.2	121.2 X	114.4	1.33	6.5	5.2	113.5	1.16	7.0	3.6	12	LA
3JVLB3_AL	118.9 *	117.2	117.1 L	115.5	117.2	2.21 *	7.6	1.4	117.1	2.46 *	8.4	3.0	12	AL
3VN9GX	114.4	114.8	112.4 H	107.8	112.4	0.69	13.4	3.2	116.1	2.09 *	13.5	3.9	12	LA
4D3Q34_AL	111.1	104.1	107.8	110.8	108.4	-0.54	11.9	3.3	109.0	-0.49	11.8	3.2	12	AL
4YZHYU	105.4	101.3 *	103.9	105.5	104.0	-1.93	9.1	2.0	106.1	-1.56	8.1	3.3	12	LA
63H2JN_AL	108.7	108.8	104.6	106.1	107.1	-0.97	8.3	2.1	104.9	-1.97 *	11.2	3.0	12	AL
66KZUG	109.6	114.2	113.4	116.8 *	113.5	1.06	10.2	3.0	111.2	0.33	12.2	4.3	12	LC
66KZUG_AL	114.3 H	105.9	111.2	116.8 *	112.1	0.60	15.2	4.7	111.2	0.30	16.4	4.8	12	XX
6RXVJY	104.5	109.8	108.8	115.0	109.5	-0.20	9.7	4.3	109.5	-0.30	9.7	4.3	4	XX
9G96DP	106.1	112.8	110.9	114.8 H	111.1	0.31	13.8	3.7	110.9	0.21	12.5	3.5	12	TB
9KND2P_AL	108.9	117.9	114.1	105.7	111.7	0.47	14.5	5.4	111.6	0.45	12.3	3.5	12	AL
A37WAF	111.8	115.8	109.4	109.6	111.6	0.47	10.9	3.0	112.8	0.89	15.2	4.2	12	LA
A72MFR	101.8 *	94.3 X	99.9 *	106.1	100.5	-3.04 X	10.4	4.9	102.9	-2.71 *	11.8	4.0	12	LA
AGLUEG	135.0 X	111.9	135.6 X	123.6 X	126.5	5.16 X	12.8	11.2 H	126.5	5.91 X	12.8	11.2 H	4	XX
DLLFUA	112.9 L	111.0 L	111.2	108.7	111.0	0.25	4.7	1.7	111.3	0.34	6.0	1.2	12	TP
DQH2JQ	115.6	112.2	107.2	108.0	110.8	0.19	8.0	3.9	108.6	-0.63	10.8	3.2	12	AH
EPJDFL	115.5	111.5	110.0	110.6 L	111.9	0.55	9.1	2.5	112.9	0.95	9.1	2.9	12	XX
ETZK4L_AL	114.8	108.8	No Data	109.9	111.2	0.32	10.4	3.2	109.3	-0.38	9.2	3.5	8	AL
EV8ZBR_AL	107.0	109.5	104.9	111.3	108.2	-0.62	11.9	2.8	112.9	0.94	10.7	4.7	12	AL
F42HBL	115.3	117.5	119.3 *	116.4	117.1	2.20 *	7.0	1.7	109.1	-0.46	8.1	12.8 H	12	LB
FV33FL	111.3 L	109.6 L	110.3	109.7	110.2	0.02	5.0	0.8	110.3	-0.01	8.3	1.8	12	LJ
GAD4PG_AL	107.7	110.7	110.9	110.4	109.9	-0.07	9.1	1.5	109.1	-0.44	10.0	3.6	12	XX
GJ2UCA	128.5 XL	128.0 X	128.5 XL	129.2 XL	128.6	5.80 X	3.9	0.5 L	129.4	6.98 X	3.3	2.3	12	AH
HVVBZB	107.8	105.3	109.3	106.2	107.1	-0.95	11.8	1.8	110.4	0.02	10.5	2.9	12	XX
HXFMDL	105.4	103.2	109.1	108.2	106.5	-1.16	11.6	2.7	106.6	-1.35	11.4	2.8	12	LZ
J6F2Z9	106.4	110.9	113.9	108.0	109.8	-0.11	14.0	3.3	110.2	-0.04	12.1	4.9	12	XX
JQ2VQU_AL	105.8	110.3	108.9	114.9	110.0	-0.06	10.4	3.8	110.2	-0.04	11.2	2.4	12	AL
JYU9MM	112.9	108.6	108.8	109.3	109.9	-0.07	12.9	2.0	108.7	-0.60	12.5	3.5	12	AH
KH3NRL	109.7	112.7	110.4 H	107.5	110.1	-0.02	14.7	2.1	113.1	1.02	11.3	4.3	12	LA
KH3NRL_AL	115.6	107.4	105.6	107.8	109.1	-0.33	9.5	4.4	111.0	0.23	9.6	4.9	12	XX
KWLF8E_AL	112.1	109.5	113.2	109.8	111.2	0.32	8.5	1.8	110.3	-0.02	9.7	2.0	10	AL
L6778C_AL	109.8	113.0	113.8	110.1	111.7	0.48	11.5	2.0	110.4	0.03	12.9	3.6	12	AL
LEYER4	111.2	112.8 L	111.0 L	111.8 L	111.7	0.49	4.2	0.8	111.4	0.37	5.2	0.8 L	12	LA
ML934G	108.2	105.1	114.6	113.9	110.4	0.09	10.6	4.5	110.2	-0.05	12.2	5.3	12	LZ

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 52 lb Linerboard - 52J1

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
MRGKKH	113.9	113.5	113.9 L	113.3	113.7	1.10	7.0	0.3 L	111.5	0.44	8.5	2.5	11	LA
MX3JTH	105.0	106.0	110.0	110.5	107.9	-0.72	13.1	2.8	110.7	0.13	13.1	4.3	8	XX
NGCYP3	101.5 *	107.2	105.8	107.2	105.4	-1.49	11.1	2.7	108.2	-0.76	12.2	3.6	12	XX
NPQKY7	109.5 L	105.2	111.7	110.4	109.2	-0.30	8.3	2.8	109.2	-0.42	8.3	2.8	4	XX
P83TCC_AL	110.7	111.0	116.7	112.6	112.8	0.82	9.4	2.8	111.5	0.44	12.8	5.1	11	AL
PFK3Z9	113.0	102.2	109.6	102.8 *	106.9	-1.03	9.8	5.3	109.3	-0.39	9.5	5.1	8	LA
PFK3Z9_AL	111.8	114.3	115.6	112.5	113.6	1.07	11.2	1.7	110.2	-0.05	10.4	3.8	8	AL
PVEH9F_AL	111.0	103.9	102.2	111.5	107.1	-0.95	12.6	4.8	106.3	-1.48	12.8	3.8	8	XX
QN9CN9	107.8 L	107.7 L	108.6 L	108.6 L	108.2	-0.62	3.5	0.5 L	106.9	-1.25	3.6	1.4	8	LA
QPZ9C3	106.0	99.9 *	96.4 X	107.8	102.5	-2.40 *	10.5	5.3	107.1	-1.18	11.1	5.2	12	LA
QWJPND	108.2	110.3	103.0	107.1	107.2	-0.95	14.3	3.1	111.2	0.32	12.9	5.4	12	LA
RE2VRW_AL	112.9	109.7 L	102.9	107.5	108.2	-0.60	10.0	4.2	108.1	-0.81	12.7	3.3	12	AL
RZWY7A	117.6 L	No Data	110.2	No Data	113.9	1.18	4.7	5.2	112.4	0.77	5.6	2.7	6	AH
RZWY7A_AL	97.6 X	No Data	107.3	No Data	102.5	-2.43 *	8.1	6.9	105.0	-1.93	9.6	5.3	5	AL
THXWDB	100.6 *	112.9	109.8	112.1	108.8	-0.42	8.2	5.6	111.7	0.51	8.8	4.1	12	LC
VFFQLQ	110.6	111.8	111.0 L	111.4	111.2	0.33	5.4	0.5 L	110.0	-0.12	11.0	3.4	12	AH
VXJ9UB	109.1	103.8 H	115.4	116.3	111.1	0.31	16.2	5.8	110.5	0.08	14.4	6.1	11	LA
XR6AD2	110.5	112.5	112.3	107.1	110.6	0.14	11.7	2.5	111.2	0.31	13.1	5.1	12	LA
Y4TVW2_AL	108.7	101.5	102.3	104.1	104.1	-1.89	10.6	3.2	105.3	-1.82	9.7	2.8	12	XX
Y89DY6	112.8	110.4	121.6 *L	No Data	114.9	1.51	7.1	5.9	112.3	0.73	6.6	5.4	6	AH
Z3FLJV_AL	119.2 *	114.0	112.3	112.2	114.4	1.34	14.2	3.3	114.4	1.49	14.2	3.3	4	AL
Z4T7B6	113.2	107.9	108.1	107.4	109.1	-0.32	8.3	2.8	112.8	0.91	11.1	5.4	12	LZ
ZFH3D4	110.3	107.1 H	115.4	108.7	110.4	0.07	14.9	3.6	113.7	1.24	12.7	4.7	12	AH
ZULDX4	109.9	116.9	108.5	105.5	110.2	0.02	12.5	4.8	112.4	0.76	13.5	4.2	12	LC

Consensus (All Labs) Results

Wk Mean	110.44	109.80	110.26	110.03	Month Mean	110.15	Grand Mean	110.33
Avg SDr	10.16	10.91	11.03	10.74	Avg SD	10.59	Avg SD	10.98
SD btwn Labs	4.23	4.38	4.40	3.41	SD btwn Labs	3.17	SD btwn Labs	2.74
Labs Incld	56	55	55	53	SD btwn Wks	3.54	SD btwn Wks	4.23
Labs Excld	3	2	3	3	Labs Incld	56	Labs Incld	57
Labs not Rcvd	0	2	1	3				

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42H3

TAPPI Official Test Method T822

Report #656
May 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
3E4HGY	88.7 *	90.9	89.5 *	89.7	89.7	-2.15 *	2.9	0.9	89.0	-2.10 *	3.5	4.1	16	LC
3VN9GX	94.6	91.7	93.0 L	94.7	93.5	-0.68	2.6	1.4	94.9	-0.05	2.5	2.1	16	LG
4D3Q34	97.2	97.2	97.1	97.7	97.3	0.77	2.7	0.3 L	95.7	0.26	2.6	1.5	16	LD
4VMH23	95.9	95.2	97.0	96.8	96.2	0.36	3.5	0.8	97.2	0.75	3.0	1.8	16	TH
4YZHYU	94.8	95.3	95.0 L	94.8 L	95.0	-0.13	2.1	0.2 L	93.7	-0.45	2.6	1.0	16	LD
66KZUG	95.9	90.3	98.6 L	87.2 *L	93.0	-0.88	2.4	5.2 H	93.4	-0.55	3.2	3.9	16	LD
6AXHBX	96.0 L	96.6 L	96.2 L	97.0 L	96.4	0.44	1.7	0.4	96.0	0.34	1.6	1.0	12	MB
6RXVJY	92.9	96.9	96.1	94.1	95.0	-0.11	6.0	1.8	95.0	-0.01	6.0	1.8	4	LD
7HMTXY	83.2 X	81.0 X	82.8 X	79.1 X	81.5	-5.29 X	3.3	1.9	89.0	-2.11 *	3.5	5.1	16	EM
9G96DP	95.8	96.5	97.0	93.5	95.7	0.15	4.1	1.5	95.4	0.15	3.8	2.7	16	LD
9KND2P	102.8 *	74.7 XH	70.9 XH	73.8 XH	80.5	-5.67 X	7.9	14.9 H	90.0	-1.75	6.6	14.9 H	16	LZ
A37WAF	94.4 L	93.9	92.6 L	93.1	93.5	-0.70	2.3	0.8	93.5	-0.54	2.6	1.3	16	LD
A72MFR	97.4 H	98.9 H	93.9 H	87.6 *H	94.4	-0.33	19.8	5.0 H	97.6	0.91	20.8	3.6	16	LB
AGLUEG	85.1 XL	84.2 XH	89.7 *	78.3 XH	84.3	-4.21 X	9.7	4.7 H	88.9	-2.13 *	6.2	6.2	16	LD
DLLFUA	96.9	96.9	95.8	97.1	96.7	0.53	2.9	0.6	95.5	0.15	3.0	1.4	16	TH
F42HBL	96.7	95.5 H	96.2	96.9	96.3	0.40	6.0	0.6	96.4	0.47	5.0	1.5	16	LD
FV33FL	94.4	94.2 L	94.9	95.3	94.7	-0.23	2.3	0.5	95.1	0.02	2.5	0.7 L	16	LD
G2LKB9	95.4 L	95.2 L	95.0 L	95.2 L	95.2	-0.03	0.6	0.2 L	95.9	0.32	1.4	1.2	12	MZ
GAD4PG	96.7 L	97.1 L	95.2	95.9 L	96.2	0.36	2.0	0.8	97.2	0.77	2.4	1.2	16	LD
GJ2UCA	94.6	93.9	93.7	93.8	94.0	-0.50	2.8	0.4	95.2	0.07	2.6	1.5	16	LD
GNH3ZA	95.5	93.5	93.8	94.5	94.3	-0.37	2.9	0.9	94.4	-0.22	3.5	0.9 L	16	EM
GXMAE9	95.5 L	95.1 L	95.5 L	95.2 L	95.3	0.01	0.6	0.2 L	95.4	0.12	1.3	0.8 L	8	MZ
H3AGBM	97.7	92.5 H	98.2 L	99.7	97.0	0.66	4.9	3.1	99.0	1.40	4.5	2.9	16	MB
HXFMDL	97.5	93.6	95.2 L	90.9	94.3	-0.39	3.2	2.8	90.7	-1.52	4.2	5.1	16	LD
J6F2Z9	97.7	97.8	100.1	94.8	97.6	0.89	3.7	2.2	96.0	0.34	6.5	5.6	16	MB
JYU9MM	97.2 L	95.8	96.0	95.4	96.1	0.31	2.3	0.7	96.3	0.46	2.5	1.4	16	LC
KH3NRL	99.2	97.1	97.8	97.8	97.9	1.02	3.0	0.9	97.3	0.81	3.2	1.8	16	LD
L6778C	97.6	100.7 *	97.1	98.3	98.4	1.19	3.4	1.6	96.0	0.34	3.7	2.3	16	LD
MRGKKH	91.8	106.5 X	99.6	101.0 L	99.7	1.71	4.5	6.1 H	101.0	2.10 *	4.3	5.4	14	LX
MWWR9G	89.0 *	89.0 *L	88.7 *	86.9 *	88.4	-2.65 *	2.6	1.0	89.6	-1.89	2.7	3.1	16	LC
NJ7HYG	103.2 *	99.3	100.7 H	96.0	99.8	1.72	6.7	3.0	100.1	1.76	6.4	3.3	16	TU
NPQKY7	93.5 H	91.1 H	92.7	92.1	92.3	-1.14	6.6	1.0	94.0	-0.35	5.5	2.1	12	TU
P83TCC	95.9 L	95.3	95.6	96.6	95.9	0.21	3.0	0.6	97.0	0.71	3.4	1.7	16	LC
Q2XCGW	92.4	94.3 L	94.1 L	92.8	93.4	-0.72	2.4	0.9	94.6	-0.16	2.3	2.6	16	LD
QB66RC	No Data	89.9	91.6	90.0	90.5	-1.85	2.7	0.9	95.4	0.14	2.7	3.4	13	LD

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42H3

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
QN9CN9	94.3 L	95.2 L	94.2 L	95.3 L	94.7	-0.22	1.4	0.6	93.7	-0.45	1.5	1.4	16	LZ
R6C7U9	98.3	99.5	102.4 *	102.7 *	100.7	2.09 *	4.0	2.2	100.5	1.92	3.0	1.7	16	LD
RE2VRW	71.8 XH	70.9 XH	71.7 X	72.3 XH	71.7	-9.08 X	8.1	0.5	70.3	-8.64 X	8.2	2.0	16	LD
RWG4TX	96.5	98.9	96.2 L	97.1	97.2	0.72	2.5	1.2	95.0	0.00	2.9	1.6	16	LC
THXWDB	88.9 *	95.3	91.8	92.6	92.2	-1.20	3.4	2.6	92.6	-0.85	3.8	2.1	16	LD
Y4TVW2	96.8	95.9	95.2	97.4	96.3	0.40	2.7	1.0	96.5	0.51	2.8	1.2	9	LD
YK2MY8	107.1 X	106.2 X	107.1 X	106.2 X	106.6	4.35 X	2.5	0.5	106.6	4.05 X	2.5	0.5 L	4	EX
Z4T7B6	93.5	92.8	93.4	91.8	92.9	-0.92	4.0	0.8	96.1	0.38	4.6	4.2	16	LC
ZFH3D4	95.7	96.6	96.2	95.9	96.1	0.30	2.9	0.4	94.8	-0.07	2.6	1.1	16	LD
ZULDX4	96.1	99.5 L	98.3	97.5 L	97.9	0.99	2.2	1.4	95.0	0.00	2.2	2.1	16	LD

Consensus (All Labs) Results

Wk Mean	95.62	95.25	95.38	94.82	Month Mean	95.29	Grand Mean	95.02
Avg SDr	4.57	4.76	4.75	4.41	Avg SD	4.62	Avg SD	4.85
SD btwn Labs	2.97	2.83	2.91	3.47	SD btwn Labs	2.60	SD btwn Labs	2.86
Labs Incld	40	39	41	40	SD btwn Wks	1.99	SD btwn Wks	3.59
Labs Excld	4	6	4	5	Labs Incld	40	Labs Incld	43
Labs not Rcvd	1	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EX	Emerson (model not specified)
LB	L&W Crush Tester 240	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LG	L&W 753
LX	L&W 506	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)

	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
3E4HGY	120.4	121.8	125.4	121.7	122.3	-1.83	3.7	2.1	121.8	-1.57	3.5	2.5	12	LC
3VN9GX	128.7	126.6	130.4	124.8	127.6	-0.12	3.5	2.5	128.1	0.28	3.7	2.3	12	LY
4D3Q34	130.5	128.5	132.6	129.9	130.4	0.76	3.8	1.7	128.4	0.36	3.6	2.9	12	LD
4VMH23	131.2	130.7	126.4	131.6	130.0	0.63	3.4	2.4	127.4	0.06	4.4	3.3	12	TH
4YZHYU	125.2	125.4	124.0	125.1	124.9	-1.00	4.3	0.6 L	125.4	-0.53	4.0	0.9 L	12	LD
66KZUG	129.0	118.2	126.2	123.1	124.1	-1.25	3.7	4.6	128.2	0.31	4.6	7.4	12	LD
6AXHBX	128.5	128.1 L	128.8 L	128.5 L	128.5	0.15	1.8	0.3 L	127.5	0.10	1.7	0.9 L	12	MB
6RXVJY	125.1 H	124.7	127.5	127.6	126.2	-0.57	5.0	1.5	126.2	-0.27	5.0	1.5	4	LD
7HMTXY	111.6 X	112.3 X	116.1 X	114.4 X	113.6	-4.65 X	4.7	2.1	119.5	-2.23 *	5.2	4.6	12	EM
9G96DP	131.0	130.9	130.0	133.0	131.2	1.05	3.6	1.3	130.2	0.89	4.6	4.8	12	LD
9KND2P	145.3 X	116.2 *H	107.4 XH	137.5 *H	126.6	-0.45	9.8	17.7 H	122.4	-1.40	9.4	17.5 H	12	LZ
A37WAF	126.3	125.0	127.3	126.0	126.2	-0.59	3.2	0.9	126.7	-0.12	3.5	1.4	12	LD
A72MFR	103.3XH	101.0 XH	90.3 XH	81.7 XH	94.1	-10.96 X	21.6	10.0 H	98.2	-8.48 X	21.0	7.1	12	LB
AGLUEG	111.0XL	110.2 XH	118.3 *H	112.9 XH	113.1	-4.82 X	9.5	3.6	113.1	-4.12 X	9.5	3.6	4	LD
DLLFUA	127.6	125.3	125.5	126.3	126.2	-0.59	3.5	1.0	127.0	-0.06	4.1	1.2 L	12	TH
F42HBL	133.1	132.0	134.8	135.9	133.9	1.92	5.6	1.7	115.0	-3.57 X	4.9	24.1 H	12	LD
FV33FL	126.1	126.7	128.2	127.3	127.1	-0.31	4.2	0.9	126.8	-0.11	4.3	0.9 L	12	LD
G2LKB9	126.9	127.6 L	127.9 L	127.7 L	127.5	-0.15	1.5	0.5 L	130.5	0.98	1.4	2.8	12	MZ
GAD4PG	127.1	128.4	125.3	127.9	127.2	-0.27	2.6	1.4	129.6	0.70	3.0	2.7	12	LD
GJ2UCA	122.3	122.6	122.9	122.4	122.5	-1.77	3.1	0.3 L	122.2	-1.44	2.9	0.5 L	12	LD
GNH3ZA	124.7	123.5	124.1	124.2	124.1	-1.25	3.7	0.5 L	124.6	-0.75	3.9	1.0 L	12	EM
GXMAE9	128.2	127.3 L	127.6 L	127.4 L	127.6	-0.13	1.4	0.4 L	127.6	0.13	1.4	0.4 L	4	MZ
H3AGBM	132.8	129.3	132.0	129.8	131.0	0.95	4.6	1.7	130.5	0.99	4.1	2.7	12	MB
HXFMDL	124.6	129.1	127.2	125.7	126.7	-0.44	4.0	2.0	126.5	-0.19	3.8	1.5	12	LD
J6F2Z9	129.2	133.5	130.2	131.9	131.2	1.04	4.3	1.9	125.1	-0.60	9.1	7.9	12	MB
JYU9MM	132.0	127.0 L	127.4	128.8	128.8	0.25	2.8	2.2	128.9	0.50	3.2	1.4	12	LC
KH3NRL	129.5	127.3	130.9	128.5	129.1	0.34	3.7	1.5	129.2	0.59	3.8	1.6	12	LD
L6778C	129.7	133.5	133.3	133.1	132.4	1.42	4.9	1.8	131.2	1.18	4.5	1.8	12	LD
MRGKKH	115.8XH	143.6 X	127.6 H	137.4 *	131.1	1.00	9.5	12.1 H	133.2	1.76	9.4	10.2 H	11	LY
MWWR9G	119.8 *	116.2 *	118.1 *	117.4 *	117.9	-3.28 X	3.3	1.5	119.9	-2.12 *	3.6	6.0	12	LC
NJ7HYG	136.9 *	132.3	132.9 H	128.4 H	132.6	1.48	5.6	3.5	131.5	1.26	5.0	2.9	12	TU
NPQKY7	126.4 H	120.5 H	127.9 H	123.3 H	124.5	-1.12	8.6	3.3	124.5	-0.77	8.6	3.3	4	TU
P83TCC	136.4 *	138.0 *	134.6	134.7	135.9	2.56 *	4.6	1.6	136.1	2.61 *	4.5	1.3	12	LC
Q2XCGW	126.7	123.7	125.6 L	126.0	125.5	-0.81	2.4	1.3	125.2	-0.57	2.6	1.2 L	8	LD
QB66RC	No Data	124.1	126.6	123.7	124.8	-1.03	3.8	1.5	128.3	0.32	4.0	3.0	11	LD

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 52 lb Linerboard - 52J1

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
QN9CN9	124.5	129.6	125.0	128.5	126.9	-0.35	2.4	2.6	126.9	-0.07	2.9	1.9	8	LZ
R6C7U9	125.4	131.5	134.2	135.8	131.7	1.19	3.6	4.5	132.2	1.47	3.8	3.1	12	LD
RE2VRW	86.2 XH	86.2 XH	86.8 XH	84.5 XH	85.9	-13.58 X	10.5	1.0	84.3	-12.53 X	11.3	2.3	12	LD
RWG4TX	128.8	127.9	130.9	126.6	128.6	0.18	4.1	1.8	126.2	-0.28	4.0	3.0	12	LC
THXWDB	123.2	131.5 H	132.3	132.3	129.8	0.58	6.8	4.4	128.9	0.52	5.4	3.4	12	LD
Y4TVW2	127.7	127.9	129.2	129.0	128.4	0.14	3.2	0.8	125.9	-0.37	4.1	3.1	9	LD
YK2MY8	144.9 X	146.8 X	144.9 X	146.8 X	145.9	5.77 X	4.2	1.1	145.9	5.47 X	4.2	1.1 L	4	EX
Z4T7B6	122.3	124.2	123.8	129.9	125.1	-0.95	3.4	3.3	124.5	-0.78	5.3	7.5	12	LC
ZFH3D4	127.7	126.6	127.1	125.8	126.8	-0.39	3.7	0.8	126.4	-0.22	3.7	1.2	12	LD
ZULDX4	126.5	126.7	128.4	127.4	127.2	-0.25	2.6	0.8	125.2	-0.57	2.5	3.4	12	LD

Consensus (All Labs) Results

Wk Mean	127.61	126.92	127.96	128.29	Month Mean	128.00	Grand Mean	127.16
Avg SDr	3.87	4.65	4.30	4.16	Avg SD	4.50	Avg SD	4.69
SD btwn Labs	3.84	4.61	3.86	4.41	SD btwn Labs	3.10	SD btwn Labs	3.42
Labs Incld	37	39	40	40	SD btwn Wks	4.02	SD btwn Wks	4.54
Labs Excld	7	6	5	5	Labs Incld	39	Labs Incld	40
Labs not Rcvd	1	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EX	Emerson (model not specified)
LB	L&W Crush Tester 240	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W Crush Tester 958
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
MZ	Messmer Buchel (model not specified)	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)		

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42H3

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2Z47PU_AL	23.7	23.5	24.3	26.7 *	24.5	1.05	1.9	1.5 H	24.6	0.82	2.0	2.0	8	AL
34273W	22.7	23.9	22.6	23.0	23.0	-0.67	1.6	0.6	23.0	-0.80	1.5	0.6	16	LW
3E4HGY	23.9	23.8	25.1	23.0	24.0	0.37	1.8	0.9	24.0	0.24	1.7	0.6	16	LA
3JVLB3_AL	22.4	25.1	23.4	23.1	23.5	-0.16	1.6	1.2	23.5	-0.27	1.8	0.8	16	AL
3VN9GX	24.4	22.6	24.4	22.7	23.5	-0.11	1.8	1.0	23.7	-0.05	1.7	0.8	16	BK
4D3Q34_AL	24.0 H	23.9	24.0	24.4 L	24.1	0.52	2.1	0.2	23.9	0.10	2.2	0.6	16	AL
4YZHYU	23.6	22.9	22.8	22.9	23.1	-0.65	1.7	0.4	23.3	-0.51	4.2	0.7	16	LA
63H2JN_AL	22.8	24.0	22.9	22.7	23.1	-0.60	1.6	0.6	23.9	0.16	1.9	0.8	16	AL
66KZUG	22.9	21.7	22.3	23.6	22.6	-1.13	1.7	0.8	23.1	-0.74	1.6	1.2	16	LZ
66KZUG_AL	45.3 XL	45.0 XL	47.9 XL	43.8 XL	45.5	25.02 X	0.0	1.7 H	46.1	22.85 X	0.0	1.4	16	AL
77EZEY	24.3	24.6	23.9	24.2	24.2	0.70	2.0	0.3	24.0	0.24	2.0	0.5	16	LH
99BD6V	24.6	24.1	24.7	24.3	24.4	0.92	1.8	0.3	23.8	0.02	1.6	0.6	12	XX
9G96DP	23.2	23.6	23.8	24.6	23.8	0.21	2.1	0.6	23.6	-0.20	2.1	0.8	16	LW
9KND2P_AL	24.3	24.0 L	23.3	23.3	23.7	0.12	1.5	0.5	23.0	-0.81	1.7	0.7	16	AL
A37WAF	22.6	23.0	23.1	22.7	22.9	-0.88	1.6	0.3	23.0	-0.78	1.7	0.4	16	LY
A72MFR	23.6	23.8	24.6 H	24.4	24.1	0.53	2.3	0.5	23.7	-0.09	2.1	0.9	16	LH
AEVVZH	24.8 L	25.6	25.5 L	24.6	25.1	1.72	1.1	0.5	25.2	1.44	1.4	0.4	16	LH
AGLUEG	22.6 L	23.1 L	24.1 L	23.3 L	23.3	-0.40	0.0	0.7	25.7	1.92	1.7	6.7 H	16	LH
BTVUNF	24.0	24.0	25.2	25.1	24.6	1.10	1.6	0.7	23.9	0.12	1.6	1.1	12	LH
EV8ZBR_AL	21.5 *	22.9	23.8	23.9	23.0	-0.68	1.6	1.1	23.9	0.13	1.8	1.3	12	AL
F42HBL	25.0	24.8	24.7	24.8	24.8	1.34	1.9	0.1	24.8	1.07	2.0	0.3 L	16	LU
G2LKB9	23.2 L	23.2 L	23.5 L	23.3 L	23.3	-0.35	0.3	0.2	24.4	0.61	0.9	0.9	12	XX
GAD4PG_AL	22.5	22.7	22.6	22.6	22.6	-1.16	1.6	0.1 L	23.0	-0.81	1.6	0.7	16	AL
GXMAE9	23.2 L	23.4 L	23.4 L	23.3 L	23.3	-0.35	0.3	0.1 L	24.1	0.30	0.6	0.8	8	XX
H3AGBM	23.5 H	23.2	22.4	23.6	23.2	-0.52	2.1	0.5	23.8	-0.03	1.8	0.7	16	LA
HVVBZB	23.5	23.1	23.5	22.1 L	23.1	-0.66	1.5	0.7	23.1	-0.76	1.5	0.6	16	LH
HXFMDL	23.0	24.3	24.0	24.2	23.9	0.27	1.8	0.6	23.8	0.00	1.7	0.4	16	LY
J6F2Z9	24.6	25.8 H	25.5	25.7	25.4	1.99 *	2.0	0.6	24.9	1.13	1.8	0.8	16	LA
JQ2VQU_AL	28.8 X	28.2 X	27.8 X	28.8 X	28.4	5.47 X	2.0	0.5	30.0	6.39 X	2.5	1.3	16	AL
JYU9MM	23.3	23.0	23.9	23.5	23.4	-0.25	1.8	0.4	23.3	-0.54	1.7	0.4	16	LU
K84WZL	22.5	21.4 *	23.1	22.5	22.4	-1.44	1.5	0.7	22.7	-1.07	1.5	0.8	8	XX
KH3NRL_AL	23.0 L	24.1	23.7	23.7	23.6	-0.03	1.7	0.4	23.4	-0.41	1.8	0.4	16	AL
KWLF8E	23.4	23.0	23.5	22.3	23.1	-0.65	1.8	0.5	23.4	-0.44	1.8	0.9	15	LU
L6778C_AL	24.9	24.2	24.0	25.1	24.5	1.04	1.7	0.6	24.2	0.41	1.8	0.6	16	AL
LEYER4	23.7	23.9	23.9	23.7	23.8	0.19	1.8	0.1	23.8	0.05	2.0	0.2 L	16	LZ

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42H3

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
ML934G	24.0	24.2 H	23.5	23.4	23.8	0.21	2.3	0.4	24.5	0.72	2.2	0.8	16	LH
MRGKKH	24.3	26.7 *	27.5 XH	26.7 *H	26.3	3.09 X	3.5	1.4 H	26.3	2.61 *	3.4	2.5 H	14	LZ
MWWR9G	23.7 H	21.7	21.5 *	21.5	22.1	-1.74	2.4	1.1	22.1	-1.78	1.8	0.6	16	LZ
NGCYP3	22.4 L	21.8	22.7	22.4	22.3	-1.49	1.3	0.4	24.4	0.64	1.5	1.5	16	LA
NJ7HYG	25.1	24.5 L	24.9	25.7	25.1	1.63	1.5	0.5	25.2	1.41	1.8	0.7	15	LA
NPQKY7	23.7	23.4	23.4	22.7	23.3	-0.36	1.8	0.4	23.6	-0.15	2.1	0.5	12	TT
P83TCC	23.3	23.5 H	25.0	23.6	23.8	0.26	2.3	0.8	23.5	-0.31	2.0	0.8	16	LU
PFK3Z9	22.1	21.3 *	22.7	22.5	22.2	-1.68	1.9	0.6	22.5	-1.36	1.8	0.8	14	LH
PFK3Z9_AL	22.0 L	22.3	21.5 *	21.8	21.9	-1.97 *	1.3	0.3	22.1	-1.74	1.4	1.0	12	AL
PVEH9F_AL	24.8	23.8	24.4	25.1	24.6	1.07	2.2	0.6	26.0	2.30 *	2.1	1.4	10	XX
QPZ9C3	24.3	23.8	25.6	24.2	24.5	0.96	1.9	0.8	24.8	1.06	2.2	1.1	16	LH
R6C7U9	22.2	22.6	22.2	22.2	22.3	-1.55	1.6	0.2	23.5	-0.26	1.6	1.7	16	LH
RE2VRW	23.1	24.1	23.6	23.3	23.5	-0.12	1.7	0.4	23.3	-0.52	1.9	0.5	16	LY
RE2VRW_AL	22.4	23.4 L	23.3	23.8	23.2	-0.47	1.7	0.6	23.0	-0.76	1.8	0.7	16	AL
RZWY7A	23.0	No Data	23.0	No Data	23.0	-0.77	1.4	0.0	24.1	0.32	1.6	0.9	6	LU
RZWY7A_AL	24.4	No Data	23.5	No Data	24.0	0.38	1.6	0.6	24.2	0.42	1.7	0.6	5	AL
THXWDB	23.4	24.2	22.9	24.4	23.7	0.13	1.6	0.7	23.7	-0.13	1.7	0.6	16	LA
UBRN32	21.2 *	22.9	22.6 H	22.5	22.3	-1.52	2.4	0.8	22.8	-1.03	2.5	0.7	10	LH
V8MH2Z	25.2	23.7	24.6	24.8	24.6	1.10	1.8	0.6	24.7	0.97	1.9	0.6	16	LU
VXXRE9	23.2	23.8	23.3	22.8	23.3	-0.40	1.8	0.4	22.4	-1.44	1.8	1.2	16	LA
WQTBHT	24.7	25.7	25.1	25.5 L	25.2	1.85	1.6	0.5	25.1	1.39	1.8	0.5	16	LA
XR6AD2	24.6	25.8	24.0	23.6 L	24.5	1.00	1.7	1.0	24.0	0.19	1.7	1.0	16	LY
Y4TVW2_AL	23.9	23.5	23.3	23.4	23.5	-0.11	1.8	0.3	23.1	-0.67	1.7	0.5	12	XX
Y89DY6	25.2	26.1 *	25.6 *	No Data	25.7	2.33 *	2.2	0.5	25.6	1.87	2.0	0.6	9	LU
Z3FLJV_AL	53.7 XL	52.4 XL	54.3 XL	53.5 XL	53.5	34.13 X	0.0	0.8	53.0	29.98 X	0.0	2.0	6	AL
Z4T7B6	19.6 X	20.4 X	19.9 X	21.4 *	20.3	-3.81 X	1.9	0.8	21.3	-2.55 *	1.8	1.1	16	LY
ZFH3D4	23.1	23.8	23.3	23.6	23.5	-0.20	1.8	0.3	23.1	-0.69	1.8	0.6	16	LU
ZULDX4	23.1	23.2	24.4	24.2	23.7	0.10	1.8	0.7	22.8	-0.97	1.7	0.9	16	LA

Consensus (All Labs) Results

Wk Mean	23.52	23.68	23.71	23.65	Month Mean	23.62	Grand Mean	23.79
Avg SDr	1.85	1.83	1.78	1.83	Avg SD	1.78	Avg SD	1.89
SD btwn Labs	0.95	1.13	0.98	1.18	SD btwn Labs	0.87	SD btwn Labs	0.97
Labs Incld	59	57	58	57	SD btwn Wks	0.61	SD btwn Wks	1.25
Labs Excld	4	4	5	3	Labs Incld	58	Labs Incld	60
Labs not Rcvd	0	2	0	3				

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	BK	Buchel Strip Compression Tester BK-155
LA	L&W Autoline (223 Enrollment)	LH	L&W 282
LU	L&W 52 without moisture correction(was 53)	LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 without moisture correction	LZ	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2Z47PU_AL	34.9	35.0	35.1	36.2	35.3	1.44	2.5	0.6	35.3	1.55	2.5	0.6	4	AL
34273W	30.5	30.7	33.0	31.3	31.4	-1.45	2.2	1.1	31.8	-1.05	2.5	0.9	12	LW
3E4HGY	32.3	35.1	34.1	34.5	34.0	0.49	2.5	1.2	34.2	0.74	2.4	1.4	12	LA
3JVLB3_AL	30.1	32.6	33.1	31.9 L	31.9	-1.06	1.9	1.3	31.6	-1.19	2.9	2.2	12	AL
3VN9GX	31.2	31.9	34.0	32.2	32.3	-0.75	2.2	1.2	33.3	0.07	2.3	1.3	12	BK
4D3Q34_AL	33.7	32.7 H	32.8	33.3	33.1	-0.16	2.6	0.5	33.2	-0.02	2.5	1.0	12	XX
4YZHYU	32.7	32.2 L	33.0	32.3	32.6	-0.58	2.1	0.4	32.9	-0.26	2.4	0.5	12	LW
63H2JN_AL	33.8	33.3	31.3	33.9	33.1	-0.20	2.4	1.2	33.2	0.01	2.3	0.9	11	AL
66KZUG	31.3	33.0	33.2	30.9	32.1	-0.91	2.0	1.2	32.6	-0.46	2.3	1.5	12	LZ
66KZUG_AL	41.8 XL	41.5 XL	41.8 XL	39.3 XL	41.1	5.71 X	0.0	1.2	41.6	6.26 X	0.0	2.4	12	XX
77EZEY	32.7	35.6	33.7	34.3	34.1	0.53	2.5	1.2	33.9	0.55	2.5	1.0	12	LH
99BD6V	34.0	33.1	34.3	34.0	33.9	0.38	2.4	0.5	33.9	0.49	2.4	0.5	4	XX
9G96DP	32.8	33.2	32.6 H	33.2	32.9	-0.30	2.8	0.3	33.3	0.04	2.8	0.6	12	LW
9KND2P_AL	33.2	31.5	31.0	32.9	32.1	-0.89	2.7	1.1	32.1	-0.85	2.3	1.1	12	AL
A37WAF	32.7	33.9	33.9	32.7	33.3	-0.05	2.2	0.7	33.2	0.00	2.1	0.6	12	LZ
A72MFR	36.1 H	33.3 H	35.5	32.9	34.4	0.81	3.2	1.6	33.6	0.26	2.9	1.2	12	LH
AEVVZH	36.7 *	36.6 *L	36.4 L	35.7	36.3	2.21 *	1.5	0.4	35.7	1.84	1.6	0.9	12	LH
AGLUEG	34.8 L	36.8 *L	33.2 L	33.6 L	34.6	0.93	0.0	1.6	34.6	1.04	0.0	1.6	4	LH
BTVUNF	33.9	33.6	34.3	33.7	33.9	0.38	2.3	0.3	32.6	-0.44	2.2	1.4	8	LH
EV8ZBR_AL	30.2	33.9	35.0	35.7	33.7	0.25	2.4	2.5 H	34.1	0.67	2.4	2.2	12	AL
F42HBL	34.8	34.5	34.7	34.9	34.7	1.03	2.4	0.2 L	31.6	-1.18	2.1	5.2 H	12	LU
G2LKB9	33.5 L	33.3 L	33.2 L	33.4 L	33.3	-0.01	0.4	0.1 L	34.1	0.70	0.7	0.9	8	XX
GAD4PG_AL	33.4	33.4	33.3 L	33.3	33.3	-0.01	1.7	0.1 L	33.3	0.07	1.6	1.1	12	XX
GXMAE9	33.1 L	33.3 L	33.2 L	33.2 L	33.2	-0.11	0.4	0.1 L	33.2	-0.02	0.4	0.1 L	4	XX
H3AGBM	33.9 L	32.9	32.5	33.9	33.3	-0.03	2.2	0.7	33.2	-0.02	2.0	0.7	12	LA
HVVBZB	32.1	32.1	32.2	32.1	32.1	-0.90	1.9	0.1 L	31.8	-1.05	2.0	0.5	12	LH
HXFMDL	33.0	33.4	32.8	33.3	33.1	-0.18	2.2	0.3	32.5	-0.51	2.2	1.5	12	LZ
J6F2Z9	34.2	34.5	34.8	32.9	34.1	0.57	2.1	0.8	33.9	0.55	2.4	1.3	12	LA
JQ2VQU_AL	40.4 X	40.3 X	40.5 X	39.6 X	40.2	5.04 X	2.7	0.4	41.1	5.87 X	2.6	1.1	12	AL
JYU9MM	32.4 L	32.1	32.3	31.6	32.1	-0.91	2.1	0.3	32.6	-0.46	2.1	0.7	12	LU
K84WZL	32.5	32.6	33.6	34.0	33.2	-0.11	2.5	0.7	33.8	0.47	2.2	0.9	8	XX
KH3NRL_AL	33.5	33.8	No Data	32.1 L	33.1	-0.15	1.8	0.9	32.8	-0.32	2.2	0.8	11	AL
KWLF8E	33.2	30.6	31.9	32.6	32.1	-0.93	1.8	1.1	32.1	-0.81	2.3	0.7	11	LU
L6778C_AL	34.2	34.1	34.7	34.5	34.3	0.74	2.2	0.3	33.6	0.31	2.2	0.6	12	AL
LEYER4	33.2	32.8	33.1	33.1	33.0	-0.22	2.4	0.2	32.6	-0.45	2.5	0.5	12	LZ

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 52 lb Linerboard - 52J1

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
ML934G	33.7 L	34.1 L	33.6 L	33.4 L	33.7	0.28	1.0	0.3	33.8	0.42	2.2	0.7	12	LZ
MRGKKH	30.4	33.0	35.7	34.6 H	33.4	0.07	2.9	2.3 H	32.4	-0.58	3.8	3.3 H	11	LZ
MWWR9G	29.1 *H	30.0	30.6 *	30.2	30.0	-2.48 *	2.7	0.6	30.9	-1.69	2.2	0.9	12	LZ
NGCYP3	33.2 L	34.5 L	35.1	32.8	33.9	0.41	1.5	1.1	34.7	1.12	2.1	1.7	12	LA
NJ7HYG	36.0	35.7	36.9 *	36.5 *	36.3	2.16 *	2.3	0.5	35.9	2.04 *	2.4	0.6	11	LA
NPQKY7	33.6 H	32.6 H	34.1	31.4 H	32.9	-0.30	3.4	1.2	32.9	-0.21	3.4	1.2	4	TT
P83TCC	34.4	35.1	33.5	34.6	34.4	0.80	2.0	0.7	33.6	0.29	2.3	1.3	11	LU
PFK3Z9	32.0	29.9 *	31.2	31.7	31.2	-1.58	1.9	0.9	30.9	-1.69	1.9	0.8	8	LH
PFK3Z9_AL	29.0 *L	30.3 L	30.3 *	30.0 *	29.9	-2.54 *	1.4	0.6	29.9	-2.50 *	1.4	0.6	8	AL
PVEH9F_AL	34.4	34.9	33.9	33.2 L	34.1	0.56	2.0	0.7	34.7	1.12	1.8	0.9	8	XX
QPZ9C3	34.6 H	34.5	36.4	35.2	35.2	1.36	2.5	0.9	35.0	1.31	2.5	1.0	12	LH
R6C7U9	29.5 *	29.7 *	29.1 X	28.2 X	29.1	-3.12 X	1.9	0.7	31.4	-1.38	2.1	2.6	12	LH
RE2VRW	30.6	31.6	32.6	32.0	31.7	-1.23	2.3	0.8	31.4	-1.34	2.2	0.6	12	LY
RE2VRW_AL	32.5	32.6	32.1	33.1	32.5	-0.58	2.1	0.4	32.5	-0.55	2.1	0.5	12	AL
RZWY7A	34.0	No Data	34.9	No Data	34.4	0.78	2.3	0.6	34.6	1.06	2.3	0.6	6	LA
RZWY7A_AL	33.5	No Data	35.0	No Data	34.2	0.66	2.3	1.1	33.6	0.32	1.9	1.5	5	AL
THXWDB	34.0 H	34.8	34.8	37.4 *	35.2	1.40	2.6	1.5	35.5	1.70	2.4	1.1	12	LA
UBRN32	31.2	30.5	32.0 H	31.0	31.2	-1.60	2.7	0.6	31.5	-1.27	2.9	0.9	12	LH
V8MH2Z	33.9	33.2	35.2	33.4	33.9	0.45	2.2	0.9	33.9	0.53	2.3	0.7	8	LU
VXXRE9	32.9	33.5	32.9	29.5 *L	32.2	-0.84	2.0	1.8	31.5	-1.30	2.1	2.9 H	12	LA
WQTBHT	33.5	32.9	34.2	35.7	34.1	0.54	1.7	1.2	34.7	1.14	2.0	1.2	12	LA
XR6AD2	33.3	33.8	32.9	34.5	33.6	0.21	2.4	0.7	33.7	0.38	2.3	0.6	12	LU
Y4TVW2_AL	33.4	33.0	33.1	33.2	33.2	-0.12	2.3	0.2	32.6	-0.43	2.2	0.6	12	XX
Y89DY6	35.1	37.3 *	37.1 *	No Data	36.5	2.33 *	2.6	1.2	36.4	2.39 *	2.7	0.9	6	LU
Z3FLJV_AL	46.6 XL	44.3 XL	47.7 XL	43.8 XL	45.6	9.04 X	0.0	1.9	45.6	9.25 X	0.0	1.9	4	AL
Z4T7B6	26.6 X	25.6 X	27.0 X	24.8 X	26.0	-5.42 X	2.8	1.0	27.9	-3.96 X	2.4	2.5	12	LW
ZFH3D4	35.2	32.8	32.1	31.8	33.0	-0.28	2.5	1.6	32.5	-0.50	2.4	0.9	12	LU
ZULDX4	32.7	31.7	34.4	32.7	32.8	-0.36	2.0	1.1	32.3	-0.66	1.9	0.9	12	LU

Consensus (All Labs) Results

Wk Mean	33.05	33.22	33.61	33.23	Month Mean	33.34	Grand Mean	33.21
Avg SDr	2.31	2.16	2.25	2.22	Avg SD	2.24	Avg SD	2.30
SD btwn Labs	1.67	1.67	1.50	1.62	SD btwn Labs	1.36	SD btwn Labs	1.34
Labs Incld	59	57	57	55	SD btwn Wks	0.99	SD btwn Wks	1.38
Labs Excld	4	4	5	5	Labs Incld	58	Labs Incld	59
Labs not Rcvd	0	2	1	3				

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

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2Z47PU_AL	147.9	0.48	14.67	157.1	1.32	13.01	2	AL
3E4HGY	152.4	0.77	13.06	144.0	0.28	11.37	4	EV
3JVLB3_AL	132.0	-0.56	18.79	136.0	-0.36	4.78	4	AL
4YZHYU	138.6	-0.13	14.74	139.2	-0.10	5.43	4	LA
63H2JN_AL	161.1	1.34	15.96	149.8	0.75	13.36	4	AL
66KZUG	0.3	-9.18 X	0.02 L	34.1	-8.48 X	67.72 H	4	LA
66KZUG_AL	141.4	0.06	14.44	139.4	-0.09	8.26	4	AL
9G96DP	121.5	-1.25	8.49	124.5	-1.27	5.86	4	XX
9KND2P_AL	107.1	-2.19 *	20.92	127.9	-1.01	22.74	4	AL
A37WAF	135.4	-0.34	15.38	133.7	-0.54	2.57	4	LS
EPJDFL	149.2	0.56	11.54	153.5	1.04	7.96	4	LS
EV8ZBR_AL	154.0	0.88	18.44	131.0	-0.76	19.93	3	AL
H3AGBM	139.5	-0.07	11.37	137.7	-0.22	3.17	4	LA
HXFMDL	162.9	1.46	18.96	158.8	1.46	17.54	4	EV
J6F2Z9	156.1	1.02	24.88	147.4	0.55	12.52	4	LA
JQ2VQU_AL	128.3	-0.80	17.12	130.6	-0.79	22.61	4	AL
KWLF8E	175.9	2.31 *	13.48	169.9	2.35 *	6.88	4	EV
L6778C	169.0	1.86	22.43	154.0	1.08	23.79	4	LS
L6778C_AL	144.6	0.26	28.56 H	144.6	0.33	0.00	1	AL
LEYER4	141.5	0.06	17.15	142.4	0.15	1.11 L	4	LS
ML934G	131.1	-0.62	16.53	122.3	-1.45	6.56	4	LS
MWWR9G	142.2	0.11	11.20	149.8	0.74	5.48	4	EV
NJ7HYG	127.9	-0.83	24.51	139.3	-0.09	9.59	4	LA
P83TCC	128.9	-0.76	11.07	140.9	0.03	16.90	2	EV
PFK3Z9_AL	132.8	-0.51	14.32	126.4	-1.13	5.62	3	AL
PVEH9F_AL	158.8	1.19	20.57	158.4	1.43	2.13 L	3	AL
QPZ9C3	134.9	-0.37	18.61	135.3	-0.41	1.39 L	4	EV
RE2VRW	121.9	-1.22	11.51	110.2	-2.42 *	19.80	4	XX
RE2VRW_AL	123.6	-1.11	15.56	123.6	-1.35	0.00	1	AL
RZWY7A_AL	127.6	-0.85	9.37	140.4	-0.01	27.47 H	3	AL
THXWDB	141.2	0.04	16.19	143.2	0.22	12.54	4	LA
WQTBHT	126.8	-0.90	9.21	139.4	-0.09	10.84	4	LA
Z4T7B6	228.7	5.76 X	27.35 H	230.1	7.14 X	13.40	4	LS
ZFH3D4	142.5	0.13	13.96	145.1	0.37	2.18 L	4	EV

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

Consensus (All Labs) Results

Month Mean	140.58	Grand Mean	140.50
Avg SD	16.71	Avg SD Months	13.08
SD btwn Labs	15.28	SD btwn Labs	12.54
Labs Incld	32	Labs Incld	32

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 - 42H3

TAPPI Official Test Method T538

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2Z47PU_AL	373.5	0.55	5.48		373.5	0.52	0.00	1	AL
4D3Q34	374.3	0.67	7.13		369.7	-0.10	3.99	4	PP
63H2JN_AL	364.2	-0.87	3.65		365.9	-0.71	2.94	4	AL
66KZUG_AL	365.6	-0.66	7.40		366.6	-0.59	2.37	4	AL
7HMTXY	364.3	-0.86	7.55		363.5	-1.08	4.77	4	TS
A37WAF	379.8	1.52	15.79	H	379.4	1.47	1.48	4	XX
A72MFR	337.7	-4.92 X	4.19		343.8	-4.24 X	4.28	4	LA
EV8ZBR_AL	365.5	-0.67	6.13		361.4	-1.43	4.31	3	AL
GAD4PG_AL	374.5	0.71	6.47		374.0	0.60	4.37	4	AL
JYU9MM	372.6	0.41	9.41		374.3	0.65	1.42	4	XX
KH3NRL_AL	376.3	0.98	6.11		373.7	0.55	2.28	4	AL
L6778C_AL	410.1	6.15 X	0.17	L	375.8	0.88	23.30 H	4	AL
PFK3Z9_AL	354.3	-2.38 *	7.02		357.8	-2.00 *	4.95	2	AL
PVEH9F_AL	372.3	0.37	7.99		370.7	0.07	3.21	3	XX
RE2VRW_AL	367.4	-0.38	6.83		366.2	-0.66	3.14	4	AL
VXXRE9	375.9	0.92	7.00		379.2	1.43	4.65	4	XX
Y4TVW2_AL	367.8	-0.32	6.03		372.7	0.39	5.45	3	XX

Consensus (All Labs) Results

Month Mean	369.89	Grand Mean	370.27
Avg SD	7.77	Avg SD Months	7.02
SD btwn Labs	6.54	SD btwn Labs	6.23
Labs Incld	15	Labs Incld	16

Key to Instrument Codes Reported by Participants

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 - 42H

TAPPI Official Test Method T569

Report #656
May 2024

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3E4HGY	128.2	-0.26	7.40		125.8	-0.42	3.38	4	TM
4YZHYU	141.4	0.50	7.83		145.4	1.04	13.08	4	HY
63H2JN	127.0	-0.33	4.36		137.5	0.45	12.38	4	TM
9GP36P	143.6	0.62	16.07	H	134.3	0.21	15.48	4	XX
9KND2P	173.6	2.35 *	5.94		138.6	0.54	26.10 H	4	TM
EPJDFL	144.6	0.68	8.26		140.8	0.70	3.35	4	HY
GAD4PG	143.2	0.60	6.46		142.3	0.81	2.43	4	LZ
HXFMDL	155.3	1.30	5.01		151.7	1.52	5.68	4	HZ
JYU9MM	149.5	0.96	7.26		147.6	1.21	1.49 L	4	HY
KH3NRL	127.9	-0.28	6.76		125.2	-0.47	2.34	4	TM
KWLF8E	113.4	-1.12	1.14	L	114.3	-1.29	5.69	4	TM
L6778C	111.2	-1.24	5.49		116.2	-1.14	3.82	4	TM
NPQKY7	110.2	-1.30	6.56		115.8	-1.17	6.09	3	TM
P83TCC	108.0	-1.43	10.84		111.6	-1.49	3.21	4	TM
QPZ9C3	140.2	0.43	17.25	H	139.0	0.56	3.76	4	TM
RE2VRW	129.0	-0.22	4.85		125.5	-0.45	5.18	4	TM
UBRN32	131.2	-0.09	5.07		131.9	0.04	3.36	3	HY
VXXRE9	102.4	-1.75	4.39		103.5	-2.09 *	8.22	4	SC
Y4TVW2	137.6	0.28	7.03		147.7	1.21	9.90	3	HY
ZFH3D4	129.6	-0.18	3.21		129.7	-0.13	0.77 L	4	TM
ZULDX4	141.0	0.47	6.60		136.2	0.35	4.33	4	HZ

Consensus (All Labs) Results

Month Mean	132.77	Grand Mean	131.45
Avg SD	7.94	Avg SD Months	8.85
SD btwn Labs	17.37	SD btwn Labs	13.36
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	130.14	18.83	2.63	16
Modified Scott Bond Mechanics	144.71	4.26	11.94	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	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results			
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months
2Z47PU	26.0	-0.40	3.35		24.3	-0.94	2.40	2
3JVLB3	26.8	-0.13	3.27		24.7	-0.80	2.47	4
4D3Q34	29.2	0.68	1.30		30.1	1.11	0.87	4
4YZHYU	33.0	1.96 *	1.73		28.0	0.38	3.44	4
63H2JN	27.6	0.14	3.21		29.3	0.86	1.77	4
9G96DP	28.0	0.28	4.53		26.7	-0.10	1.25	4
9KND2P	31.3	1.38	4.00		29.7	1.00	1.10	4
9MZ4BT	26.6	-0.19	1.95		26.9	-0.03	0.30 L	4
A37WAF	30.7	1.18	4.12		30.3	1.20	2.73	4
AGLUEG	22.5	-1.57	2.40		23.3	-1.29	1.73	4
AKNNGR	25.8	-0.46	2.59		26.2	-0.28	0.47	4
DLLFUA	29.4	0.75	7.22 H		29.9	1.06	0.57	4
EPJDFL	28.8	0.55	0.84		28.8	0.65	0.10 L	4
ETZK4L	25.4	-0.60	1.14		25.6	-0.48	1.31	3
EV8ZBR	21.0	-2.08 *	4.73		25.3	-0.58	3.93	3
GAD4PG	25.4	-0.60	1.67		25.8	-0.42	0.24 L	4
HXFMDL	25.2	-0.66	3.96		24.3	-0.95	2.80	4
J6F2Z9	27.6	0.14	0.55 L		27.9	0.35	0.42	2
JQ2VQU	22.0	-1.74	3.08		23.5	-1.21	1.84	4
JYU9MM	25.5	-0.57	1.03		24.7	-0.80	1.85	4
KWLF8E	30.6	1.15	1.95		31.3	1.56	1.01	4
L6778C	23.8	-1.13	1.92		24.3	-0.96	1.22	4
LEYER4	27.2	0.01	1.10		27.2	0.08	0.25 L	4
ML934G	21.4	-1.94 *	1.52		21.1	-2.10 *	0.93	4
MWWR9G	28.4	0.40	2.69		28.3	0.48	1.69	4
P83TCC	28.4	0.41	2.41		29.4	0.86	1.96	4
QPZ9C3	28.6	0.49	2.19		28.5	0.55	1.40	4
RE2VRW	25.2	-0.66	2.17		23.6	-1.21	1.61	4
RZWY7A	32.4	1.76	1.34		32.6	2.03 *	0.28	2
UBRN32	26.0	-0.40	1.00		23.4	-1.25	5.15 H	3
VXXRE9	27.0	-0.06	0.71		24.1	-1.01	3.35	4
Y4TVW2	26.8	-0.13	2.39		27.7	0.26	0.81	3
Y89DY6	32.0	1.62	1.22		31.5	1.62	0.92	3
Z3FLJV	13.1	-4.74 X	0.60 L		13.5	-4.79 X	0.66	2
Z4T7B6	29.0	0.61	1.00		29.2	0.79	0.57	4
ZFH3D4	26.6	-0.19	1.67		25.8	-0.42	3.53	4

Consensus (All Labs) Results

Month Mean	27.18	Grand Mean	26.93
Avg SD	2.73	Avg SD Months	2.00
SD btwn Labs	2.98	SD btwn Labs	2.80
Labs Incld	35	Labs Incld	35

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
2Z47PU_AL	32.8	0.06	2.28		32.5	-0.21	0.41	2	AL
3JVLB3_AL	30.2	-1.50	1.30		30.5	-1.93	0.64	4	AL
4D3Q34	35.0	1.39	3.17		33.6	0.68	2.08	4	TP
4YZHYU	34.3	0.96	1.77		33.6	0.68	0.54	4	LP
63H2JN_AL	32.7	-0.02	1.76		31.9	-0.71	0.57	4	AL
66KZUG_AL	31.1	-0.97	2.56		31.6	-1.02	1.36	4	XX
6RXVJY	31.2	-0.91	3.55		31.2	-1.32	0.00	1	GG
944M3P	34.7	1.22	3.17		33.8	0.93	1.38	4	LP
9G96DP	32.0	-0.46	2.93		33.6	0.69	1.15	4	LP
9KND2P_AL	31.7	-0.63	2.92		32.0	-0.60	1.45	4	AL
A37WAF	32.0	-0.45	3.38		31.8	-0.78	1.51	4	GA
A72MFR	30.6	-1.28	2.24		32.8	0.07	2.58 H	4	LA
AKNNGR	33.8	0.66	4.14 H		33.1	0.33	1.09	4	TD
EPJDFL	33.5	0.45	1.29		32.8	0.05	0.93	4	LP
ETZK4L_AL	31.7	-0.60	1.27		32.8	0.05	1.21	4	AL
EV8ZBR_AL	29.6	-1.88	1.84		30.1	-2.24 *	1.94	3	AL
GAD4PG_AL	32.3	-0.25	1.46		34.0	1.10	1.45	4	AL
H3AGBM	31.3	-0.87	2.52		32.2	-0.45	1.49	4	LA
HXFMDL	34.4	1.02	2.78		33.0	0.22	0.93	4	LP
J6F2Z9	31.1	-0.96	2.22		30.1	-2.29 *	1.53	4	LA
JQ2VQU_AL	37.0	2.62 *	2.36		36.7	3.38 X	1.41	4	AL
JYU9MM	31.5	-0.72	3.91		32.3	-0.34	1.31	4	TP
KH3NRL_AL	33.2	0.28	1.85		33.1	0.32	0.33	4	AL
KWLF8E_AL	33.6	0.53	2.86		32.7	-0.07	0.77	4	AL
L6778C_AL	32.8	0.06	1.93		32.6	-0.11	0.72	4	AL
LEYER4	32.6	-0.07	2.32		32.5	-0.26	0.39	4	LP
ML934G	32.4	-0.18	3.82		29.1	-3.07 X	3.71 H	4	TD
NGCYP3	31.5	-0.71	2.28		33.3	0.45	1.68	3	LA
NJ7HYG	33.8	0.64	1.89		33.3	0.44	0.92	4	LA
NPQKY7	33.3	0.35	3.37		33.2	0.36	0.85	3	GA
P83TCC_AL	32.8	0.07	1.74		32.9	0.13	1.41	4	AL
PFK3Z9_AL	32.7	-0.01	2.14		33.6	0.74	1.07	3	AL
PVEH9F_AL	32.9	0.09	1.08 L		33.3	0.47	0.62	3	XX
QN9CN9	32.0	-0.43	0.82 L		32.4	-0.34	0.60	4	XX
QPZ9C3	32.0	-0.44	2.19		32.6	-0.17	0.88	4	LP
R6C7U9	31.8	-0.55	2.15		34.0	1.08	1.71	4	XX
RE2VRW	31.5	-0.72	1.16		32.9	0.09	1.45	4	LP
RE2VRW_AL	36.2	2.12 *	1.63		34.9	1.85	0.94	4	AL
RZWY7A	34.3	0.96	2.80		34.6	1.59	0.80	3	GG

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42H3

TAPPI Official Test Method T460

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
RZWY7A_AL	30.6	-1.28	1.26		30.8	-1.66	0.26	3	AL
THXWDB	34.0	0.76	2.22		33.3	0.49	1.40	4	LA
WQTBHT	31.8	-0.55	1.19		32.6	-0.10	1.09	4	LA
Y4TVW2	33.1	0.26	4.50	H	33.1	0.31	0.19 L	3	TP
Y4TVW2_AL	32.4	-0.21	1.79		32.2	-0.50	0.19 L	3	XX
Y89DY6	36.8	2.45 *	1.83		35.2	2.11 *	1.37	3	GG
Z4T7B6	26.7	-3.64 X	1.77		25.6	-6.13 X	0.97	4	XX
ZFH3D4	34.7	1.22	4.68	H	34.6	1.53	1.50	4	GA
ZZNM6W	30.2	-1.51	1.15		30.8	-1.68	1.65	4	LP

Consensus (All Labs) Results

Month Mean	32.71	Grand Mean	32.75
Avg SD	2.51	Avg SD Months	1.22
SD btwn Labs	1.65	SD btwn Labs	1.18
Labs Incld	47	Labs Incld	45

Key to Instrument Codes Reported by Participants

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
3E4HGY	59.2	58.9	57.7 L	58.5	58.6	0.31	2.3	0.6	58.8	0.42	2.6	1.1	16	LC
3JVLB3	54.1	57.2	54.4	56.8	55.6	-0.79	3.6	1.6	56.5	-0.53	4.3	1.8	16	LZ
3VN9GX	58.1	56.4	59.3	55.9	57.4	-0.12	3.2	1.6	57.8	-0.01	3.3	1.1	16	LZ
4D3Q34	56.9	59.1	59.2	55.5	57.7	-0.03	4.6	1.8	57.7	-0.06	4.6	1.8	4	LD
4YZHYU	60.3	59.2	60.0	61.3	60.2	0.91	4.1	0.9	59.6	0.77	4.3	1.4	16	XX
63H2JN	59.5	57.5	55.5	55.5	57.0	-0.27	3.9	1.9	57.7	-0.05	3.7	1.5	16	LD
66KZUG	56.5	55.9	56.0	53.8	55.6	-0.80	4.0	1.2	56.5	-0.55	3.6	1.5	16	LD
6AXHBX	58.1	58.6	58.1 L	58.4	58.3	0.20	1.7	0.2	58.0	0.09	1.6	1.3	12	MB
77EZEY	58.4	60.4	58.7	61.8	59.8	0.77	3.9	1.6	59.5	0.73	4.2	1.5	16	LD
944M3P	59.2	59.4	57.8	58.5	58.7	0.35	3.4	0.7	58.8	0.44	4.0	1.6	16	LD
9G96DP	64.6 *H	60.0	64.6 *	63.2	63.1	1.97 *	4.9	2.2	61.5	1.57	4.3	1.9	16	LD
9YNEEQ	56.1	56.2	56.9	55.9	56.3	-0.54	3.3	0.4	56.4	-0.60	3.6	0.8	12	LD
A37WAF	56.2	56.9	56.5	57.6	56.8	-0.35	3.0	0.6	57.7	-0.04	3.6	2.3	16	LZ
A72MFR	56.6	55.8	54.2	55.7	55.6	-0.80	4.3	1.0	52.9	-2.08 *	4.3	2.1	16	LD
AEVVZH	53.6	52.2	55.2	52.3	53.3	-1.63	3.2	1.4	54.5	-1.37	3.4	1.6	16	LD
AGLUEG	63.8 *	60.0	59.7	58.9	60.6	1.05	3.0	2.2	61.5	1.57	3.4	2.2	16	LD
AKNNGR	55.9	56.2	58.3	54.8	56.3	-0.53	3.6	1.5	55.6	-0.94	3.8	1.5	16	LZ
BTVUNF	59.3	59.5	59.2	58.0	59.0	0.47	4.2	0.7	58.7	0.40	3.7	0.7	12	LD
E6WN9E	57.0 H	60.5	60.6	60.7	59.7	0.72	4.4	1.8	60.4	1.09	5.6	2.4	15	LD
EPJDFL	57.7	57.5	58.3	57.8	57.8	0.03	2.1	0.3	57.7	-0.03	2.4	1.4	16	LD
F42HBL	60.0	60.1	61.8	61.2	60.8	1.12	3.8	0.9	58.9	0.48	4.5	1.9	16	LD
FV33FL	59.9	58.7	59.8	59.8	59.5	0.66	3.5	0.6	59.2	0.59	3.4	0.9	16	LD
G2LKB9	58.0	57.9 L	57.1 L	57.2 L	57.6	-0.06	1.2	0.5	57.1	-0.27	1.7	1.5	12	XX
GAD4PG	51.4 *	52.2	52.5	52.8	52.2	-2.03 *	2.6	0.6	53.1	-1.97 *	2.6	1.6	16	LD
HVVBZB	57.7	56.6	55.0	57.2	56.6	-0.42	2.6	1.2	56.9	-0.39	2.9	1.0	16	EM
HXFMDL	58.8	56.9	57.4	54.7	57.0	-0.29	4.3	1.7	55.8	-0.86	4.5	1.9	16	LZ
J6F2Z9	56.5	56.0	58.0	56.4	56.7	-0.37	4.8	0.9	56.8	-0.41	4.7	1.7	16	MB
JYU9MM	57.9	54.8	58.2	57.4	57.1	-0.24	3.6	1.6	58.8	0.43	3.8	2.2	16	LC
K84WZL	60.5 L	61.3 L	59.3 L	60.7 L	60.4	0.98	0.9	0.9	59.3	0.65	0.9	1.4	8	XX
LEYER4	58.0 L	57.7	58.4	58.1	58.1	0.11	2.1	0.3	58.0	0.08	2.0	0.4 L	16	LD
LQPBRF	57.8	54.8	60.7	58.3	57.9	0.06	4.3	2.4	59.1	0.58	4.1	2.5	16	LD
MEDZ26	58.5 L	58.4 L	58.5 L	58.5 L	58.5	0.27	0.5	0.0 L	58.6	0.33	0.9	0.2 L	16	LD
MRGKKH	60.1	59.8	59.1	62.6	60.4	0.98	3.9	1.5	58.8	0.42	4.1	2.5	16	LD
MWWR9G	52.8	53.4	51.0 *	53.6	52.7	-1.85	3.6	1.2	53.3	-1.90	3.9	2.4	16	EN
NJ7HYG	62.1	63.6	57.8 H	58.5	60.5	1.02	5.5	2.8	59.2	0.60	5.0	2.6	16	TU

Containerboard Interlaboratory Testing Program

Analysis 240

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
P83TCC	60.0	59.2	No Data	62.0	60.4	0.98	4.0	1.4	60.4	1.13	4.1	1.3	13	LC
R6C7U9	50.1 *	47.8 X	52.6	53.8	51.1	-2.46 *	3.7	2.7	54.9	-1.22	3.3	2.9	16	LD
RE2VRW	55.2	55.7	57.1	56.4 H	56.1	-0.61	5.3	0.8	55.3	-1.06	4.3	1.1	16	LD
UC3QPZ	56.8	64.3	59.0	61.0	60.3	0.92	3.5	3.2 H	61.1	1.41	4.1	4.4 H	16	LD
VHKJD4	62.3	61.8	61.3	61.2	61.6	1.43	1.8	0.5	62.6	2.06 *	2.9	1.2	16	TB
VXJ9UB	53.0	51.0 *	51.5 *H	52.5	52.0	-2.11 *	4.5	0.9	52.6	-2.21 *	3.9	1.7	16	TH
WFYWKG	60.6	63.7	57.9	59.8	60.5	1.01	5.0	2.4	57.9	0.03	3.9	3.0	16	LD
WLKUA4	62.8	63.1	62.6	61.2	62.4	1.72	2.9	0.8	61.7	1.66	3.1	1.2	16	LC
XR6AD2	59.9	58.5	58.4	59.7	59.1	0.51	4.6	0.8	59.4	0.70	4.8	1.6	16	LD
Y4TVW2	56.6	57.8	59.6	57.4	57.9	0.04	3.0	1.3	57.8	-0.01	3.6	1.4	12	LD
ZFH3D4	55.6	52.5	55.7	53.4	54.3	-1.28	3.5	1.6	54.7	-1.31	3.6	1.1	16	LD
ZKBE4T	67.3 X	66.8 *	63.7 *	68.2 X	66.5	3.21 X	4.7	1.9	66.7	3.79 X	4.9	1.3	16	TX
ZULDX4	55.1	56.0	54.5	55.0	55.1	-0.96	2.7	0.6	56.4	-0.59	2.5	1.5	16	LD
ZZNM6W	56.8	57.9	57.8	58.3	57.7	-0.03	2.8	0.6	58.3	0.23	3.1	1.5	16	LD

Consensus (All Labs) Results

Wk Mean	57.83	58.08	57.84	57.70	Month Mean	57.75	Grand Mean	57.78
Avg SDr	3.70	3.43	3.84	3.55	Avg SD	3.62	Avg SD	3.69
SD btwn Labs	2.99	3.25	2.87	2.85	SD btwn Labs	2.72	SD btwn Labs	2.35
Labs Incld	48	48	48	48	SD btwn Wks	1.43	SD btwn Wks	1.81
Labs Excld	1	1	0	1	Labs Incld	48	Labs Incld	48
Labs not Rcvd	0	0	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
TB	TMI Monitor/Compression Tester, 17-70	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
3JVLB3	59.7 XH	63.0	63.2	64.0 L	62.5	-1.82	4.1	1.9	62.9	-0.94	3.9	2.9	16	LZ
3VN9GX	66.6	67.4	63.8	69.8	66.9	-0.05	3.7	2.5	66.3	0.00	3.7	1.7	16	LZ
4D3Q34	70.0	69.3	71.3	67.7	69.6	1.03	3.3	1.5	69.6	0.92	3.3	1.5	4	LD
4YZHYU	66.6	69.3	68.6	68.5 L	68.2	0.49	4.1	1.1	69.0	0.75	3.6	1.4	16	XX
63H2JN	65.2	70.4	68.1	69.5	68.3	0.51	3.1	2.3	67.6	0.36	3.6	1.7	16	LD
66KZUG	65.4	61.3	64.1	64.4	63.8	-1.29	3.6	1.8	64.2	-0.58	4.1	1.7	16	XX
6AXHBX	65.6	65.4	65.8 L	65.2 L	65.5	-0.61	1.7	0.3 L	64.8	-0.41	1.7	0.6 L	12	MB
944M3P	66.6	67.2	62.0	65.6	65.4	-0.66	4.8	2.3	65.4	-0.25	3.7	1.8	16	LD
9G96DP	67.0	62.4	65.2	69.3	66.0	-0.42	4.5	2.9	67.2	0.25	3.9	1.9	16	LD
A72MFR	53.3 XH	54.6 XH	55.1 *H	55.6 *	54.6	-4.96 X	7.5	1.0	58.9	-2.04 *	8.3	7.4 H	16	LD
F42HBL	68.4	65.4	65.9	63.0 H	65.7	-0.54	10.2	2.2	66.7	0.11	6.0	1.6	16	LD
G2LKB9	63.9 L	63.0 L	63.7 L	64.5 L	63.8	-1.29	1.2	0.6	62.5	-1.06	1.6	1.5	12	XX
GAD4PG	68.7	67.2	68.0 L	68.2	68.0	0.40	2.5	0.6	68.5	0.62	2.8	2.2	16	LD
JYU9MM	69.1	72.1	65.2	68.4	68.7	0.68	3.5	2.8	69.0	0.75	3.3	1.7	16	LC
K84WZL	69.3 L	68.8 L	70.8 L	72.2 L	70.3	1.30	0.9	1.6	70.2	1.09	1.2	1.2	8	XX
LEYER4	66.9	66.9	67.2	67.4 L	67.1	0.03	1.9	0.2 L	67.3	0.29	2.1	0.5 L	16	LD
P83TCC	72.0 *	70.7	No Data	72.3 L	71.7	1.86	3.0	0.9	70.7	1.24	4.3	2.4	13	LC
QN9CN9	66.0	65.0	65.7 L	65.4 L	65.5	-0.60	1.8	0.4	65.7	-0.15	1.7	1.2	16	LZ
RE2VRW	57.7 X	58.2 *	57.0 *	56.6 *	57.4	-3.86 X	4.8	0.7	57.3	-2.48 *	5.3	1.1	16	LD
Y4TVW2	67.2	65.1 H	67.7 H	63.1	65.8	-0.50	6.1	2.1	67.2	0.25	4.8	2.5	12	LD
ZZNM6W	71.3	71.4	69.0	71.0	70.7	1.46	3.3	1.1	70.9	1.28	3.9	1.6	16	LD

Consensus (All Labs) Results

Wk Mean	67.54	66.47	65.36	66.27	Month Mean	67.01	Grand Mean	66.27
Avg SDr	3.75	3.32	4.03	5.37	Avg SD	4.08	Avg SD	3.99
SD btwn Labs	2.18	3.66	4.05	4.39	SD btwn Labs	2.50	SD btwn Labs	3.60
Labs Incld	18	20	20	21	SD btwn Wks	1.75	SD btwn Wks	2.34
Labs Excld	3	1	0	0	Labs Incld	19	Labs Incld	21
Labs not Rcvd	0	0	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
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
4D3Q34	42.8	43.5	45.4	41.7	43.4	0.88	3.3	1.5	43.4	0.86	3.3	1.5	4	LD
4VMH23	38.3	38.6	41.9	40.5	39.8	-1.04	2.8	1.7	41.2	-0.49	2.9	1.6	16	TH
4YZHYU	41.0	40.5	40.9	40.6	40.8	-0.54	3.2	0.3	41.1	-0.57	3.2	1.6	16	XX
66KZUG	40.6	39.6	40.5	42.1	40.7	-0.57	2.6	1.0	41.1	-0.57	3.7	1.5	16	LD
6AXHBX	41.5	41.9	41.8	41.5	41.7	-0.03	1.7	0.2 L	41.5	-0.31	1.7	0.2 L	12	MB
77EZEY	43.1	40.5	44.8	44.4	43.2	0.80	2.4	1.9	43.2	0.75	3.2	2.2	16	LD
944M3P	39.2	40.3	37.9	40.2	39.4	-1.27	3.4	1.1	40.2	-1.12	3.3	1.2	16	LD
9YNEEQ	42.6	43.2	43.8	42.1	42.9	0.64	2.0	0.8	43.9	1.18	2.7	1.0	12	LC
A37WAF	43.7	40.4	37.7	41.8	40.9	-0.46	3.5	2.5	40.0	-1.23	3.1	1.9	16	LD
AGLUEG	36.7 *L	38.0	32.5 X	33.7 X	35.2	-3.56 X	3.7	2.5	38.3	-2.28 *	3.6	3.1	12	XX
E6WN9E	40.8	42.6	38.6	36.8 *	39.7	-1.11	3.1	2.5	41.7	-0.19	3.5	2.2	15	LD
FV33FL	43.4	41.7	41.2	42.3	42.1	0.21	3.6	0.9	42.4	0.27	3.7	1.1	16	LD
G2LKB9	42.4 L	42.8 L	42.9 L	43.1 L	42.8	0.57	0.6	0.3	43.2	0.79	1.4	0.6	12	MZ
GAD4PG	42.9	41.4	40.6	43.1	42.0	0.13	2.5	1.2	43.0	0.67	2.9	1.1	16	LD
J6F2Z9	42.7	43.0	43.4	43.2	43.1	0.73	3.3	0.3	40.9	-0.64	4.0	2.9	16	MB
JYU9MM	47.0 *H	41.6	41.9	43.2	43.4	0.92	3.7	2.5	42.8	0.51	3.4	2.1	16	LC
LQPBRF	43.6	44.3	46.2	47.7 *	45.5	2.04 *	3.6	1.9	43.8	1.16	3.7	2.4	16	EM
MEDZ26	44.3 L	44.0 L	44.1 L	44.3 L	44.2	1.33	0.6	0.1 L	45.0	1.86	0.7	0.5	16	LD
MRGKKH	42.4	45.9 *	41.6	44.6	43.6	1.03	3.9	2.0	43.1	0.72	3.7	2.8	16	LZ
NGCYP3	40.5	39.8	39.9	39.1	39.8	-1.06	3.1	0.6	41.1	-0.54	2.9	1.4	16	LD
R6C7U9	43.7	44.7	45.1	44.3	44.4	1.48	3.2	0.6	45.0	1.92 *	2.9	1.0	16	LD
UC3QPZ	39.0	39.3	42.3	36.9 *	39.4	-1.31	2.6	2.2	39.9	-1.30	2.6	1.8	16	LD
VHKJD4	41.4	42.1	41.2	39.7	41.1	-0.34	3.0	1.0	40.5	-0.91	2.6	1.2	16	XX
WFYWKG	39.7	41.6	41.2	43.6	41.5	-0.11	3.7	1.6	41.9	-0.06	4.6	1.7	16	LD
WLKUA4	40.1 L	42.8	40.1	39.6	40.6	-0.60	2.9	1.4	40.6	-0.87	2.8	1.1	16	XX
Y4TVW2	41.6	41.8	40.4	40.5	41.1	-0.36	3.0	0.7	42.2	0.17	3.0	1.7	12	LD
ZKBE4T	40.6	39.3	38.3	41.7	40.0	-0.97	3.4	1.5	42.1	0.06	3.3	2.1	16	LZ
ZULDX4	43.9	42.9	44.4	44.7	44.0	1.22	2.7	0.8	43.7	1.06	2.6	0.9	16	LD
ZWNEZM	37.1 *	36.7 *	37.5	40.1	37.8	-2.14 *	4.0	1.6	31.4	-6.61 X	3.5	6.1 H	16	XX
ZZNM6W	41.4	40.3	42.2	42.6	41.6	-0.06	3.0	1.0	40.5	-0.90	3.1	1.4	16	LD

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	41.60	41.51	41.65	41.93	Month Mean	41.74	Grand Mean	41.97
Avg SDr	3.16	2.97	3.05	2.97	Avg SD	3.03	Avg SD	3.12
SD btwn Labs	2.23	2.08	2.37	2.37	SD btwn Labs	1.82	SD btwn Labs	1.60
Labs Incld	30	30	29	29	SD btwn Wks	1.43	SD btwn Wks	1.72
Labs Excld	0	0	1	1	Labs Incld	29	Labs Incld	29
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	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 #656
May 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
4D3Q34	13.4	13.8	14.1	13.6	13.7	0.02	1.2	0.3	13.7	-0.02	1.2	0.3	4	LB
63H2JN	14.2	13.9	13.5	12.9	13.6	-0.13	1.0	0.6	13.9	0.38	1.1	0.4	16	LA
66KZUG	13.6	12.5	14.1	13.3	13.4	-0.63	1.0	0.7	13.3	-0.86	1.3	0.8	16	LZ
77EZEY	13.5	14.3	13.8	14.0	13.9	0.43	1.1	0.3	13.9	0.34	1.1	0.3	16	XX
9YNEEQ	14.0	14.5	14.4	14.5	14.4	1.43	0.9	0.3	14.1	0.85	1.1	0.4	12	LH
A37WAF	13.9 H	13.3	13.9	13.5	13.6	-0.11	1.2	0.3	13.5	-0.52	1.1	0.4	16	LB
AGLUEG	13.3 L	13.6 L	13.7 L	13.5 L	13.5	-0.35	0.0	0.2	14.4	1.48	1.0	1.9 H	16	LH
DLLFUA	14.2	13.7	13.8	13.6	13.8	0.31	1.1	0.3	13.8	0.15	1.1	0.4	16	TX
EPJDFL	13.3	13.3	13.3 L	13.4	13.3	-0.78	0.9	0.0 L	13.4	-0.69	0.9	0.2 L	16	LH
G2LKB9	13.4 L	13.4 L	13.4 L	13.3 L	13.3	-0.75	0.2	0.0 L	13.9	0.31	0.4	0.6	12	XX
GAD4PG	13.4	13.3 L	13.8	13.5 L	13.5	-0.37	0.7	0.2	13.4	-0.56	0.8	0.4	16	LA
H3AGBM	13.5	12.6	13.2	13.6	13.2	-1.00	1.1	0.4	13.2	-1.05	1.3	0.4	16	LA
HVVBZB	13.1	13.5	13.2	12.6	13.1	-1.25	1.1	0.4	13.1	-1.20	1.0	0.3	16	LH
J6F2Z9	13.8	14.8 L	14.1	15.1 *	14.4	1.62	1.2	0.6	14.2	1.10	1.1	0.4	16	LA
JYU9MM	13.5	13.8	13.3	13.1	13.4	-0.56	1.1	0.3	13.5	-0.51	1.0	0.2	16	LU
K84WZL	13.4	13.0	12.9	12.8	13.0	-1.43	1.0	0.3	13.1	-1.23	0.9	0.3	8	XX
L6778C	15.2 *	14.6	14.1 L	14.2	14.5	1.77	1.0	0.5	14.3	1.15	1.1	0.4	16	LA
LEYER4	13.5	13.9	13.7	13.6	13.7	0.00	1.1	0.2	13.8	0.15	1.1	0.2 L	16	LA
LQPBRF	15.3 *	14.9 L	15.5 X	15.7 XL	15.4	3.58 X	0.8	0.3	14.2	0.94	0.8	1.3 H	8	LH
MRGKKH	12.7	11.7 *	12.3 *H	10.8 X	11.9	-3.85 X	1.4	0.8 H	12.5	-2.48 *	1.2	1.1	15	XX
NGCYP3	14.2	15.3 *	14.8 *	14.5	14.7	2.16 *	1.3	0.5	14.0	0.61	1.0	1.0	16	LH
NJ7HYG	14.3	13.2	14.1	14.0	13.9	0.45	1.2	0.5	14.4	1.50	1.1	0.5	15	LA
RE2VRW	13.1	12.9	13.1 H	13.6	13.2	-1.13	1.4	0.3	13.0	-1.52	1.5	0.4	16	LB
V8MH2Z	14.3	13.9	13.8	14.0	14.0	0.68	1.2	0.2	14.0	0.61	1.2	0.5	16	LU
WQTBHT	14.7	12.8	14.8 *	15.1 *	14.4	1.44	1.3	1.0 H	14.4	1.48	1.1	0.7	16	LA
Z87T4N	13.2	13.2	13.2	13.2	13.2	-1.08	1.2	0.0 L	13.8	0.09	1.2	0.5	16	TX
ZFH3D4	13.5	13.2	13.4	13.6	13.4	-0.58	1.0	0.2	13.4	-0.69	1.2	0.3	16	LU
ZULDX4	13.8 H	13.3 H	13.7 H	13.6 H	13.6	-0.16	2.1	0.2	13.8	0.19	1.5	0.4	12	XX

Consensus (All Labs) Results

Wk Mean	13.76	13.57	13.69	13.67	Month Mean	13.69	Grand Mean	13.71
Avg SDr	1.15	1.10	1.26	1.09	Avg SD	1.15	Avg SD	1.11
SD btwn Labs	0.62	0.79	0.55	0.62	SD btwn Labs	0.47	SD btwn Labs	0.49
Labs Incld	28	28	27	26	SD btwn Wks	0.40	SD btwn Wks	0.66
Labs Excld	0	0	1	2	Labs Incld	26	Labs Incld	28
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)	TX	TMI (model not specified)
XX	Instrument make/model not specified by lab		

End of Report