Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

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	42L2	November 2024 - Current
	42L1	July 2024 - October 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).

Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BX18
TAPPI Official Test Method T804

Report #662
November 2024

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2PE6FB	636.6	1.71	17.44	574.0	-0.18	59.02	4	TB
3NB6PA	580.6	-0.06	0.81 L	580.7	0.03	0.01	2	EX
4XVTY3	589.6	0.22	29.31	564.8	-0.48	46.39	4	ER
4Y93CA	555.6	-0.85	66.47	566.8	-0.41	12.32	4	EX
8BAZNY	588.2	0.18	51.42	587.5	0.25	19.59	4	L0
9VV936	565.6	-0.54	32.70	578.1	-0.05	16.70	4	EX
BD9D33	632.5	1.58	35.12	603.9	0.77	35.74	4	LS
BUUVV4	589.8	0.23	43.27	611.3	1.01	36.00	4	LS
BXFM3Y	570.4	-0.38	13.78	558.6	-0.68	14.64	4	ER
C69ENX	581.8	-0.02	55.20	586.7	0.22	17.51	4	ER
EF2FFT	517.3	-2.07 *	53.77	545.9	-1.08	27.31	4	ER
EYXZYY	614.7	1.02	31.89	627.4	1.52	15.07	4	ER
GQEARX	557.6	-0.79	16.62	578.1	-0.05	23.13	4	EX
HKKYQX	573.3	-0.29	53.95	523.1	-1.81	42.20	4	LL
JVJWAR	589.0	0.20	64.58	601.9	0.71	15.14	4	EX
JVYFUP	567.5	-0.47	26.21	578.0	-0.05	19.46	4	EX
K4MLBT	557.0	-0.81	33.11	551.8	-0.89	8.87	4	LG
LL6RCR	645.4	1.99 *	41.42	641.1	1.96 *	30.94	4	EX
LNN4UU	560.0	-0.71	29.55	580.4	0.02	28.65	4	LG
LXY7FU	515.5	-2.12 *	42.17	514.7	-2.08 *	30.65	4	LG
NPVZEN	569.5	-0.41	22.62	649.2	2.22 *	74.44 H	3	LG
QEBBTN	564.1	-0.58	32.01	587.5	0.25	25.19	4	LG
QX2N2L	576.2	-0.20	50.17	570.6	-0.29	10.26	4	EX
R44X8E	594.2	0.37	19.75	573.8	-0.19	21.02	4	LM
TR7E7E	587.6	0.16	26.43	573.0	-0.21	36.90	4	ES
VWQ9ZG	631.9	1.56	15.58	605.8	0.83	20.80	4	LG
VX2BLF	581.8	-0.02	38.98	584.6	0.16	12.03	4	LG
X6WU2F	617.2	1.10	64.87	532.4	-1.51	62.15	4	ET

Consensus (All Labs) Results

Month Mean	582.53	Grand Mean	579.70
Avg SD	39.72	Avg SD Months	32.05
SD btwn Labs	31.59	SD btwn Labs	31.31
Labs Incld	28	Labs Incld	28

Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BX18
TAPPI Official Test Method T804

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Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	574.24	45.27	8.29	9
Clip sealing	584.89	22.75	2.36	18
Staple sealing	614.72	0.00	32.19	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

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
3PR2GA	49.4	0.39	1.94		48.7	0.43	0.94	3	LC
4Y93CA	47.1	-0.26	2.49		47.2	0.04	0.44	4	LC
9VV936	49.2	0.31	2.80		49.6	0.65	0.79	4	LC
BJU8YZ	51.1	0.86	2.12		50.5	0.88	0.63	4	XX
BUUVV4	45.6	-0.71	3.21		46.6	-0.12	1.36	4	LD
EF2FFT	43.4	-1.32	3.12		40.0	-1.82 *	3.85	4	EN
GLY4PW	55.6	2.12 *	0.88 L		52.4	1.38	2.75	3	XX
HNKAMX	46.9	-0.33	3.16		43.6	-0.91	4.03	4	TS
K4MLBT	48.1	-0.01	2.10		49.4	0.59	1.00	4	EX
L6V3YQ	44.4	-1.04	1.95		42.8	-1.11	1.40	3	WK

Consensus (All Labs) Results

Month Mean	48.07		Grand Mean	47.09
Avg SD	2.48		Avg SD Months	2.13
SD btwn Labs	3.54		SD btwn Labs	3.88
Labs Incld	10		Labs Incld	10

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		WK	Zwick Z005 Crush Tester
XX	Instrument make/model not specified by lab			

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC16
TAPPI Official Test Method T839

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WebCode	Monthly Results Mean	CPV	SD		Cumulative Results Mean	CPV	SD Months	Months	Inst
2PE6FB	54.8	1.09	1.01		51.0	0.40	5.80 H	4	LD
3M3QLA	53.9	0.90	1.86		53.2	1.06	1.05	2	LC
3NB6PA	48.8	-0.19	0.74 L		48.8	-0.26	0.09	2	TL
4XVTY3	46.8	-0.63	2.66		51.5	0.57	3.15	4	LD
4Y93CA	53.6	0.83	1.32		53.0	1.01	1.89	4	LC
8BAZNY	43.1	-1.44	1.29		44.3	-1.61	1.73	4	LD
8QPYX7	54.1	0.94	2.23		53.7	1.22	2.50	4	EM
8XLVK9	50.5	0.17	0.98		49.7	0.01	1.75	4	TU
9M24A4	57.7	1.72	2.59		54.0	1.32	2.56	4	TE
9VV936	53.2	0.75	2.21		52.2	0.78	1.03	4	LC
B4JJQ7	46.8	-0.63	2.00		47.4	-0.68	2.51	4	BU
BD9D33	45.7	-0.87	1.14		45.9	-1.12	1.43	4	EM
BJU8YZ	52.8	0.66	2.04		50.6	0.29	1.51	4	XX
BUUVV4	49.2	-0.12	0.71 L		49.5	-0.05	1.36	4	LD
BXFM3Y	49.6	-0.03	2.03		51.3	0.49	1.36	4	EM
C69ENX	45.2	-0.97	2.41		44.9	-1.41	3.99	4	LD
EF2FFT	46.7	-0.65	3.49 H		46.1	-1.05	0.61	4	EN
EJZT2W	38.5	-2.41 *	3.76 H		37.2	-3.70 X	1.22	4	XX
EYXZYY	55.6	1.26	2.80		52.3	0.81	2.73	4	LD
H7J86T	42.6	-1.55	1.71		42.3	-2.20 *	1.04	4	IX
HNKAMX	46.0	-0.81	1.86		45.8	-1.16	3.31	4	TS
J4TKNQ	52.6	0.62	2.59		51.7	0.63	1.51	4	TG
JVJWAR	43.9	-1.26	1.80		44.5	-1.53	4.32	4	LD
L4ZKXP	55.7	1.28	1.31		55.4	1.72	0.75	4	TG
L6V3YQ	43.1	-1.42	1.85		43.9	-1.71	2.93	3	TS
LL6RCR	47.9	-0.40	2.19		49.1	-0.17	0.88	4	CT
NPVZEN	49.3	-0.10	0.58 L		49.8	0.06	1.42	3	BU
QEBBTN	56.5	1.46	0.90		53.6	1.17	2.77	4	MK
R44X8E	48.1	-0.36	1.55		49.3	-0.10	2.83	4	EM
TR7E7E	50.4	0.14	1.56		52.5	0.86	1.43	4	LD
UEE62K	52.5	0.60	0.44 L		52.4	0.84	2.22	4	EM
VWQ9ZG	53.2	0.74	1.08		48.4	-0.38	4.66	4	EM
VX2BLF	54.7	1.08	2.13		50.0	0.12	3.22	4	EM
VZQLGE	46.1	-0.79	2.62		48.6	-0.31	3.61	4	TD
X6WU2F	51.6	0.40	2.25		50.9	0.38	0.62	4	TD

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC16
TAPPI Official Test Method T839

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November 2024

Consensus (All Labs) Results

Month Mean	49.74	Grand Mean	49.63
Avg SD	1.98	Avg SD Months	2.54
SD btwn Labs	4.65	SD btwn Labs	3.34
Labs Incld	35	Labs Incld	34

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	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		

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L2
TAPPI Official Test Method T807

Report #662
November 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
2PE6FB	110.5	107.8	107.1	106.7	108.0	-1.42	6.7	1.7	108.0	-1.42	6.7	1.7	4	XX
2ZWRL6_AL	120.7	119.4	116.9	114.4	117.9	0.66	8.4	2.8	117.9	0.66	8.4	2.8	4	XX
344UPD	111.4	115.9	110.9	109.2	111.9	-0.61	8.4	2.9	111.9	-0.61	8.4	2.9	4	XX
3Q32D4_AL	120.7	122.3	119.8	118.2	120.2	1.16	8.3	1.7	120.2	1.16	8.3	1.7	4	AL
4XVTY3	118.4	116.3	116.3	116.1	116.8	0.43	7.0	1.1	116.8	0.43	7.0	1.1	4	AH
4Y93CA	115.4	120.4	111.1	114.9	115.4	0.14	5.5	3.8	115.4	0.14	5.5	3.8	4	AH
6ZHP69	115.8	115.7	116.3	115.0	115.7	0.20	5.2	0.5	115.7	0.20	5.2	0.5	4	LA
73NCHC_AL	111.8	102.9	113.4	107.4	108.9	-1.24	8.9	4.7	108.9	-1.24	8.9	4.7	4	AL
7BRNBZ	113.9	104.0	113.1	112.0	110.7	-0.85	7.7	4.5	110.7	-0.85	7.7	4.5	4	LC
7J8BJ4	120.2	122.7	118.9	117.8	119.9	1.09	8.9	2.1	119.9	1.09	8.9	2.1	4	LJ
7KJ6Y4	115.2	114.1	116.5	114.3	115.0	0.06	7.4	1.1	115.0	0.06	7.4	1.1	4	LJ
7Y2TD9	110.2	110.0	108.5	109.2	109.5	-1.12	7.1	0.8	109.5	-1.12	7.1	0.8	4	LA
82MWK7	119.5 L	119.7 L	119.5 L	119.5 L	119.6	1.02	2.8	0.1 L	119.6	1.02	2.8	0.1 L	4	AH
8P8A8Y	115.9	119.4	118.4 H	118.3	118.0	0.69	11.5	1.5	118.0	0.69	11.5	1.5	4	TB
97EKG4	125.2 *	117.9	120.1	118.6 H	120.5	1.21	10.1	3.3	120.5	1.21	10.1	3.3	4	LC
97EKG4_AL	115.9	118.3	122.1	118.8	118.7	0.85	8.1	2.6	118.7	0.85	8.1	2.6	4	AL
9M24A4	117.0	118.5	119.7	115.2	117.6	0.60	8.9	1.9	117.6	0.60	8.9	1.9	4	LC
ALK933_AL	115.5	115.4 H	109.2	108.8	112.2	-0.53	10.1	3.7	112.2	-0.53	10.1	3.7	4	AL
BHYPXY_AL	114.3	108.5	112.0	108.6	110.9	-0.82	6.8	2.8	110.9	-0.82	6.8	2.8	4	AL
BJU8YZ	119.4	116.1	115.6	115.7	116.7	0.41	6.8	1.8	116.7	0.41	6.8	1.8	4	LC
BUUVV4	117.3	117.5	122.9	118.5	119.0	0.91	7.5	2.6	119.0	0.91	7.5	2.6	4	LA
C69ENX	111.5	109.8	107.9	110.6	110.0	-1.01	8.2	1.5	110.0	-1.01	8.2	1.5	4	LZ
D8CM83	115.1	108.9	110.2	116.0	112.6	-0.47	5.3	3.5	112.6	-0.47	5.3	3.5	4	XX
DBTURV_AL	120.1	118.0	115.3	117.8	117.8	0.64	9.0	2.0	117.8	0.64	9.0	2.0	4	AL
E2HR7V_AL	118.1	114.3	118.3	111.5	115.6	0.17	7.2	3.3	115.6	0.17	7.2	3.3	4	AL
EVUAQX_AL	118.5	118.5	118.2	115.8	117.7	0.63	7.6	1.3	117.7	0.63	7.6	1.3	4	AL
EXL7ER	110.8	109.5	108.5	112.0	110.2	-0.96	8.0	1.5	110.2	-0.96	8.0	1.5	4	LZ
EYXZYY	113.6 L	114.4 L	116.6 L	114.2	114.7	-0.01	3.0	1.3	114.7	-0.01	3.0	1.3	4	LA
EYXZYY_AL	107.7	107.1	111.5	107.8	108.5	-1.32	9.0	2.0	108.5	-1.32	9.0	2.0	4	XX
HEDDYU	127.3 *	128.6 *	132.1 X	135.3 X	130.8	3.40 X	10.0	3.6	130.8	3.40 X	10.0	3.6	4	LJ
HM7N9P	113.1	NO DATA	NO DATA	NO DATA	113.1	-0.35	11.7	0.0	113.1	-0.35	11.7	0.0	1	LJ
HM7N9P_AL	124.0	NO DATA	NO DATA	NO DATA	124.0	1.96 *	8.9	0.0	124.0	1.96 *	8.9	0.0	1	AL
HUBKWW_A	119.3	117.8	112.7	125.4 *	118.8	0.86	8.2	5.2 H	118.8	0.86	8.2	5.2 H	4	AL
JM3H8L	138.5 XH	133.0 *	129.9 X	138.6 X	135.0	4.29 X	9.5	4.3	135.0	4.29 X	9.5	4.3	4	ME
JVJWAR	115.6	109.6	111.2	109.6	111.5	-0.69	7.2	2.8	111.5	-0.69	7.2	2.8	4	AH

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L2
TAPPI Official Test Method T807

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
	Weekly Means				Monthly Results				Cumulative Results					
JVYFUP	No Data	No Data	No Data	115.5	115.5	0.15	7.3	0.0	115.5	0.15	7.3	0.0	1	XX
K4MLBT	122.8	126.2	122.6	121.0 H	123.2	1.78	11.5	2.2	123.2	1.78	11.5	2.2	4	AX
KEPQGN	No Data	101.0 *	103.4 *	No Data	102.2	-2.66 *	8.0	1.7	102.2	-2.66 *	8.0	1.7	2	AX
KEPQGN_AL	No Data	110.8	107.6	No Data	109.2	-1.18	6.0	2.3	109.2	-1.18	6.0	2.3	2	AL
LKQH4Q	116.7	116.1	115.4	117.4	116.4	0.35	6.0	0.9	116.4	0.35	6.0	0.9	4	AH
LL6RCR	115.0	116.0	124.5 *	118.5	118.5	0.79	10.3	4.3	118.5	0.79	10.3	4.3	4	XX
LRATCL	116.8	117.4	111.6	115.5	115.3	0.12	9.0	2.6	115.3	0.12	9.0	2.6	4	LA
LY8F9R	142.0 X	132.2 *H	133.8 X	135.2 XH	135.8	4.46 X	12.1	4.3	135.8	4.46 X	12.1	4.3	4	AX
LZ292P_AL	111.7	116.7	118.3	120.5	116.8	0.43	8.4	3.8	116.8	0.43	8.4	3.8	4	AL
M9BUPJ	114.1	112.5	115.9	113.4	114.0	-0.16	8.2	1.5	114.0	-0.16	8.2	1.5	4	LA
M9BUPJ_AL	112.7	114.4	113.7	115.4	114.1	-0.15	6.1	1.2	114.1	-0.15	6.1	1.2	4	AL
MALWCH	127.2 *	124.0	121.5	124.1 *	124.2	2.00 *	6.5	2.3	124.2	2.00 *	6.5	2.3	4	LA
P4BKCM	114.9	115.3	115.8	114.6	115.2	0.08	5.0	0.5	115.2	0.08	5.0	0.5	4	TP
P64D6K	107.0 L	106.4 L	106.2 L	105.8 L	106.4	-1.78	2.6	0.5	106.4	-1.78	2.6	0.5	4	LA
PHRHDG	110.7	111.7	106.2	113.5	110.5	-0.89	9.6	3.1	110.5	-0.89	9.6	3.1	4	LC
PMLCBJ_AL	112.8	111.1	106.2	105.7 *	108.9	-1.23	7.4	3.6	108.9	-1.23	7.4	3.6	4	XX
PZCACG	No Data	124.6	119.0	No Data	121.8	1.49	4.9	4.0	121.8	1.49	4.9	4.0	2	AH
QWQKUP	105.5 *	104.0	107.1	106.8	105.9	-1.89	7.8	1.4	105.9	-1.89	7.8	1.4	4	XX
RMV2NF_AL	113.4	117.3	116.1	116.5 H	115.8	0.23	11.1	1.7	115.8	0.23	11.1	1.7	4	AL
TR7E7E	107.0	109.7	108.9	111.9	109.4	-1.14	8.6	2.0	109.4	-1.14	8.6	2.0	4	LA
UZWEXB	117.0	114.5	112.0	116.2	114.9	0.04	6.6	2.2	114.9	0.04	6.6	2.2	4	LB
VGGJMG	139.5 XH	138.3 X	144.6 X	135.7 X	139.5	5.25 X	9.9	3.7	139.5	5.25 X	9.9	3.7	4	XX
VPUGRM_AL	115.4	111.2	114.7	114.6	114.0	-0.16	7.8	1.9	114.0	-0.16	7.8	1.9	4	AL
XCWGNA_AI	116.7	123.4 L	117.6	122.7	120.1	1.13	7.9	3.4	120.1	1.13	7.9	3.4	4	AL
XDDDGA_AI	114.4	118.6	115.1	114.2	115.6	0.18	8.1	2.0	115.6	0.18	8.1	2.0	4	AL
Y4JPYC	122.7	118.9	116.4	117.4	118.8	0.86	8.6	2.8	118.8	0.86	8.6	2.8	4	LC
Y9BR7H_AL	109.9	106.2	110.4	110.6	109.3	-1.16	5.3	2.0	109.3	-1.16	5.3	2.0	4	AL
YCCVWJ_AL	119.1	115.7	117.0	116.0	116.9	0.47	9.3	1.6	116.9	0.47	9.3	1.6	4	AL

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Grand
Wk Mean	115.76	115.39	114.32	114.55	Month Mean	114.75	Grand Mean	114.75
Avg SDr	8.03	8.23	7.88	7.62	Avg SD	7.93	Avg SD	7.93
SD btwn Labs	4.81	6.72	4.99	4.58	SD btwn Labs	4.72	SD btwn Labs	4.72
Labs Incld	56	59	56	54	SD btwn Wks	2.55	SD btwn Wks	2.55
Labs Excld	3	1	4	4	Labs Incld	59	Labs Incld	59
Labs not Rcvd	4	3	3	5				

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L2
TAPPI Official Test Method T807

Report #662
November 2024

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 - 52J2
TAPPI Official Test Method T807

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
2PE6FB	112.4	107.6	101.3	105.7	106.8	-1.08	9.1	4.6	106.9	-1.10	10.1	3.8	8	XX
2ZWRL6_AL	102.8	115.0	118.2	111.6	111.9	0.06	13.3	6.7	109.6	-0.36	12.7	5.1	8	XX
344UPD	109.6	109.7	110.1	107.0	109.1	-0.56	8.8	1.4	107.8	-0.85	11.1	4.5	8	XX
3Q32D4_AL	120.5	117.3	115.2	120.5	118.4	1.49	10.7	2.6	117.7	1.81	9.9	2.6	8	AL
4XVTY3	112.6	113.6	112.6	117.5	114.1	0.54	8.9	2.3	113.1	0.56	10.7	2.4	8	AH
4Y93CA	114.3	111.3	110.2	116.0	112.9	0.29	11.3	2.7	110.0	-0.26	11.7	4.3	8	AH
6ZHP69	111.4	112.3	111.6	111.8 L	111.8	0.03	6.7	0.4 L	111.9	0.25	5.9	0.5 L	8	LA
73NCHC_AL	105.5	101.1 *	114.0	108.0	107.1	-0.99	13.1	5.4	108.7	-0.60	13.7	5.2	8	AL
7BRNBZ	111.8	111.2	109.4	108.9	110.3	-0.29	9.6	1.4	110.3	-0.19	10.8	1.7	8	LC
7J8BJ4	118.3	111.8	114.5	111.7 H	114.1	0.54	13.5	3.1	113.3	0.61	12.6	4.7	8	LZ
7KJ6Y4	109.1	106.4	108.6	107.5	107.9	-0.83	8.2	1.2	107.6	-0.90	7.7	1.2	8	LJ
7Y2TD9	107.5	99.6 *	106.6	100.3 *	103.5	-1.80	14.2	4.1	104.9	-1.63	13.6	3.7	8	LA
82MWK7	130.3 XL	129.8 XL	130.4 XL	130.7 XL	130.3	4.14 X	3.0	0.4 L	129.0	4.83 X	3.0	1.5	8	AH
8P8A8Y	118.4 L	117.1	119.4	111.9	116.7	1.12	8.0	3.3	115.8	1.29	10.4	3.2	7	TB
97EKG4	105.6	112.1	115.4	107.9	110.2	-0.31	13.6	4.3	110.5	-0.13	12.9	4.6	8	LC
97EKG4_AL	111.4	106.1	108.0	112.5 H	109.5	-0.47	16.0	3.0	111.8	0.21	13.6	3.7	8	XX
9M24A4	117.0	110.8	114.6	111.5	113.5	0.41	12.6	2.9	113.1	0.57	10.9	2.9	8	XX
ALK933_AL	98.9 *	110.2	105.1	101.7	104.0	-1.70	10.3	4.8	104.0	-1.89	10.3	4.8	4	AL
BHYPXY_AL	114.1	111.9	110.1	108.3	111.1	-0.12	5.7	2.5	111.1	0.03	5.7	2.5	4	AL
BUUVV4	107.8	110.3 H	117.8	112.8	112.2	0.12	12.8	4.2	111.9	0.25	12.3	3.0	8	LA
C69ENX	108.9	115.5	115.5	108.2	112.0	0.08	12.2	4.0	109.0	-0.52	11.8	5.0	8	LZ
D8CM83	108.0	108.4	107.9	106.5	107.7	-0.87	9.8	0.8	107.8	-0.85	8.4	1.2	8	XX
DBTURV_AL	107.1 H	108.6	111.4	114.1	110.3	-0.29	19.5	3.1	111.4	0.12	16.2	3.5	7	AL
E2HR7V_AL	112.2	112.2	110.4	112.2	111.7	0.02	9.4	0.9	111.0	0.01	15.4	3.3	8	AL
EVUAQX_AL	109.3	115.7	115.1	113.9	113.5	0.41	9.0	2.9	110.5	-0.13	10.7	3.8	8	AL
EXL7ER	119.9 L	119.9 L	118.5 L	120.2 L	119.6	1.78	3.9	0.8	115.3	1.17	5.8	4.8	8	LZ
EYXZYY	120.5 L	120.0	118.4 L	120.3 L	119.8	1.81	4.4	0.9	114.9	1.04	9.3	5.4	8	LA
EYXZYY_AL	110.9	108.6	107.8	103.3	107.7	-0.88	9.0	3.2	107.7	-0.90	9.0	3.2	4	XX
HEDDYU	111.9	117.9	110.2	108.6	112.1	0.11	10.4	4.1	112.3	0.35	9.5	2.9	8	LA
HM7N9P	107.2	NO DATA	NO DATA	NO DATA	107.2	-0.98	10.8	0.0	105.5	-1.47	11.0	2.4	2	LJ
HM7N9P_AL	109.8	NO DATA	NO DATA	NO DATA	109.8	-0.41	10.1	0.0	108.9	-0.56	9.3	1.3	2	AL
HUBKWW_A	110.9	111.6	113.3	117.8	113.4	0.39	11.0	3.1	109.9	-0.31	11.7	4.5	8	AL
JM3H8L	128.8 X	129.3 X	131.6 X	126.3 *	129.0	3.85 X	13.7	2.2	129.2	4.90 X	11.9	8.1 H	8	LA
JVJWAR	110.8	101.2	105.2	99.6 *	104.2	-1.65	13.2	5.0	106.3	-1.27	12.0	4.9	8	AH
JVYFUP	NO DATA	NO DATA	NO DATA	118.4	118.4	1.50	8.2	0.0	117.8	1.83	12.2	0.9	2	XX

Containerboard Interlaboratory Testing Program
Analysis 206
Bursting Strength (Mullen), 52 lb Linerboard - 52J2
TAPPI Official Test Method T807

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
K4MLBT	119.8	116.3	124.6 *	117.4	119.5	1.75	11.3	3.7	115.7	1.27	12.8	5.6	8	LA
KEPQGN	No Data	99.0 *	102.2	No Data	100.6	-2.45 *	6.5	2.3	101.5	-2.56 *	6.9	2.6	4	AH
KEPQGN_AL	No Data	103.1	108.9 L	No Data	106.0	-1.25	5.6	4.1	106.6	-1.17	7.8	2.7	4	AL
LKQH4Q	110.4	111.4	109.7	110.9	110.6	-0.23	5.9	0.7	110.5	-0.12	5.5	1.0 L	8	AH
LL6RCR	116.5	104.0	115.5	105.0	110.3	-0.31	13.6	6.7	110.1	-0.25	12.9	4.5	8	XX
LRATCL	113.4	112.2	106.9	116.4	112.2	0.13	12.4	3.9	110.3	-0.18	12.2	3.6	8	LA
LY8F9R	117.0 H	120.4	119.9	119.6	119.2	1.68	15.6	1.5	120.4	2.52 *	14.1	4.9	8	XX
LZ292P_AL	118.6	104.4	115.6	118.6	114.3	0.59	10.4	6.7	113.8	0.76	11.6	5.1	8	AL
M9BUPJ	106.3	117.5	116.5	110.0	112.6	0.21	9.0	5.4	113.7	0.72	10.1	3.8	8	LA
M9BUPJ_AL	102.3	108.4	107.9	111.9	107.6	-0.89	10.0	4.0	110.1	-0.25	9.4	4.2	8	AL
MALWCH	113.8	116.3	117.6	116.6	116.1	0.99	10.6	1.6	115.1	1.11	10.5	2.9	8	LA
P4BKCM	109.7 L	110.3	110.9	112.1	110.8	-0.20	5.1	1.0	110.4	-0.16	5.2	0.9 L	8	TP
P64D6K	115.7 L	116.9 L	118.0 L	117.5 L	117.0	1.20	2.3	1.0	115.6	1.24	2.6	1.8	8	LA
PHRHDG	111.9	106.1	107.4	114.8	110.0	-0.35	8.2	4.0	109.0	-0.54	10.1	3.8	8	LA
PMLCBJ_AL	106.5	113.3	103.6	106.3	107.4	-0.93	11.3	4.2	106.6	-1.19	9.8	4.7	8	XX
PZCACG	No Data	118.2	113.0	No Data	115.6	0.88	6.9	3.7	113.3	0.61	7.6	2.8	6	AH
QWQKUP	106.3	114.7	104.0	104.9	107.5	-0.92	12.2	4.9	107.9	-0.84	10.5	3.9	8	LC
RMV2NF_AL	110.7	115.8	121.0	119.8	116.8	1.15	9.2	4.6	115.0	1.07	11.3	4.2	8	XX
TR7E7E	105.7	111.0	109.9	108.7	108.8	-0.62	11.8	2.3	107.3	-1.00	11.5	3.2	8	LA
UZWEXB	125.2 *	122.4	120.8	122.1 L	122.6	2.44 *	9.4	1.9	117.5	1.74	8.9	5.8	8	LB
VGGJMG	154.2 XH	144.9 XH	153.7 XH	158.6 XH	152.9	9.14 X	27.7	5.7	152.9	11.25 X	27.7	5.7	4	XX
VPUGRM_AL	107.4	116.2	108.6	110.8	110.8	-0.19	13.1	3.9	110.7	-0.07	12.4	3.1	8	AL
XCWGNA_AI	118.1	117.5	102.3	111.4	112.3	0.15	10.4	7.4 H	114.7	0.99	11.1	5.9	8	AL
XDDDGA_AI	115.0	111.6	108.3	115.9	112.7	0.23	13.6	3.5	112.4	0.38	13.3	2.9	8	AL
Y4JPYC	118.1	119.5	110.1	112.7	115.1	0.77	12.5	4.4	114.1	0.83	12.5	3.4	8	LC
Y9BR7H_AL	110.4	105.8	103.7	106.7	106.7	-1.10	6.3	2.8	108.5	-0.67	7.4	3.0	8	AL
YCCVWJ_AL	111.9	112.8	107.0	111.2	110.7	-0.21	13.6	2.6	109.4	-0.42	14.2	2.6	8	AL

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4					
Wk Mean	111.76	111.78	111.61	112.07	Month Mean	111.63	Grand Mean	110.99	
Avg SDr	11.91	10.69	10.08	10.70	Avg SD	10.72	Avg SD	10.86	
SD btwn Labs	5.25	5.51	5.41	5.74	SD btwn Labs	4.51	SD btwn Labs	3.72	
Labs Incld	55	56	56	55	SD btwn Wks	3.66	SD btwn Wks	3.72	
Labs Excld	3	3	3	2	Labs Incld	59	Labs Incld	59	
Labs not Rcvd	4	3	3	5					

Containerboard Interlaboratory Testing Program
Analysis 206
Bursting Strength (Mullen), 52 lb Linerboard - 52J2
TAPPI Official Test Method T807

Report #662
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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 - 42L2
TAPPI Official Test Method T822

Report #662
November 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
3M3QLA	96.5	94.9	93.8	94.4	94.9	0.09	3.1	1.2	94.9	0.09	3.1	1.2	4	LC
4XVTY3	95.7	93.1	95.1	96.3	95.0	0.13	3.1	1.4	95.0	0.13	3.1	1.4	4	LD
4Y93CA	95.5	97.3	98.4	97.1	97.1	0.66	2.2	1.2	97.1	0.66	2.2	1.2	4	LC
7BRNBZ	96.2	93.6	93.0	93.5	94.1	-0.12	3.1	1.4	94.1	-0.12	3.1	1.4	4	LD
7KJ6Y4	96.8	95.0	95.5	95.8	95.7	0.32	2.9	0.8	95.7	0.32	2.9	0.8	4	LD
82MWK7	93.3	92.7	92.2	91.3 L	92.4	-0.55	1.8	0.8	92.4	-0.55	1.8	0.8	4	LD
8P8A8Y	95.7	95.8 H	NO DATA	NO DATA	95.8	0.32	4.1	0.1	95.8	0.32	4.1	0.1	2	LD
97EKG4	88.6	89.4	86.2 *	90.1	88.6	-1.53	3.3	1.7	88.6	-1.53	3.3	1.7	4	LD
9M24A4	97.3	97.8	97.3	95.6	97.0	0.64	2.6	1.0	97.0	0.64	2.6	1.0	4	MB
ALK933	94.5	94.4	95.6	95.6	95.0	0.14	2.4	0.7	95.0	0.14	2.4	0.7	4	LD
B2EXXY	100.1	98.3	97.4	100.8	99.1	1.19	2.0	1.6	99.1	1.19	2.0	1.6	4	LD
BUUVV4	97.8	97.0	97.4	98.8	97.8	0.83	2.2	0.8	97.8	0.83	2.2	0.8	4	LD
C69ENX	91.1	89.5	87.9	88.5	89.3	-1.35	3.3	1.4	89.3	-1.35	3.3	1.4	4	LD
D8CM83	89.0	88.1	89.3	89.9	89.1	-1.40	4.0	0.7	89.1	-1.40	4.0	0.7	4	TU
DBTURV	95.5	97.1	98.9	97.3	97.2	0.69	3.4	1.4	97.2	0.69	3.4	1.4	4	LC
EE7WDR	97.9	97.2	102.7	103.1	100.2	1.47	3.1	3.1	100.2	1.47	3.1	3.1	4	TU
EF2FFT	89.5	87.4 *	89.8	86.1	88.2	-1.63	2.4	1.7	88.2	-1.63	2.4	1.7	4	EN
EVUAQX	66.8 XH	66.7 XH	66.6 XH	67.3 XH	66.9	-7.13 X	10.1	0.3 L	66.9	-7.13 X	10.1	0.3 L	4	LD
GNNEKV	96.8	95.6	98.2	98.8	97.3	0.72	2.6	1.4	97.3	0.72	2.6	1.4	4	MB
HYLD8V	95.9	93.3	93.5	93.7	94.1	-0.11	3.7	1.2	94.1	-0.11	3.7	1.2	4	EM
JM3H8L	106.8 XH	97.6	103.5 *	85.4 *H	98.3	0.98	5.4	9.4 H	98.3	0.98	5.4	9.4 H	4	LX
K4MLBT	93.2	94.3	95.6	97.9	95.3	0.19	1.9	2.0	95.3	0.19	1.9	2.0	4	LG
L4ZKXP	99.5 L	99.8	98.8	97.6 L	98.9	1.13	2.1	1.0	98.9	1.13	2.1	1.0	4	TH
LY8F9R	86.3 *H	85.8 *	83.7 *	84.2 *	85.0	-2.45 *	4.0	1.2	85.0	-2.45 *	4.0	1.2	4	LD
M9BUPJ	95.2	95.2	94.0	94.3	94.7	0.04	2.7	0.6 L	94.7	0.04	2.7	0.6 L	4	LD
MALWCH	98.2	95.0	101.9	104.9 *	100.0	1.41	3.5	4.3	100.0	1.41	3.5	4.3	4	LC
P4BKCM	93.6	96.4	95.2	94.1	94.8	0.08	2.7	1.2	94.8	0.08	2.7	1.2	4	TH
P64D6K	90.4 L	90.8 L	90.7 L	90.8 L	90.7	-0.99	0.9	0.2 L	90.7	-0.99	0.9	0.2 L	4	TU
PHRHDG	96.1	96.2 L	96.0	96.1	96.1	0.41	2.4	0.1 L	96.1	0.41	2.4	0.1 L	4	LD
PMLCBJ	95.5	96.5	94.6	94.9	95.4	0.22	2.4	0.8	95.4	0.22	2.4	0.8	4	LD
QWQKUP	96.0	94.7	90.5	94.3	93.9	-0.17	2.8	2.3	93.9	-0.17	2.8	2.3	4	LZ
RMV2NF	93.6	94.4	94.7	94.9	94.4	-0.04	3.1	0.6 L	94.4	-0.04	3.1	0.6 L	4	LD
UEE62K	87.4 *	88.5	87.7	86.7	87.6	-1.79	3.3	0.7	87.6	-1.79	3.3	0.7	4	EM
UZWEXB	99.0 H	96.0	95.3	97.8	97.0	0.64	3.8	1.7	97.0	0.64	3.8	1.7	4	LD
VZQLGE	96.0	95.1	95.2	95.6	95.5	0.25	1.7	0.4 L	95.5	0.25	1.7	0.4 L	4	MB

Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42L2
TAPPI Official Test Method T822

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
	Weekly Means				**Monthly Results**				**Cumulative Results**					
XARNYH	97.4	97.9	98.8	99.3	98.4	0.99	2.1	0.9	98.4	0.99	2.1	0.9	4	LD
XCWGNA	71.2 **XH**	100.4	69.3 **XH**	101.9	85.7	-2.27 *	6.2	17.9 **H**	85.7	-2.27 * 6.2		17.9 **H**	4	LZ
XDDDGA	93.9	97.2	99.6	95.0	96.4	0.49	3.1	2.5	96.4	0.49	3.1	2.5	4	LD
Y4JMA8	93.4	90.2	91.1	90.7	91.3	-0.82	3.1	1.4	91.3	-0.82	3.1	1.4	4	LD
Y4JPYC	98.1	100.6	98.1	98.6 **L**	98.9	1.12	2.2	1.2	98.9	1.12	2.2	1.2	4	LD
YBFJWA	93.9	94.1	94.1 **L**	97.0	94.8	0.06	1.6	1.5	94.8	0.06	1.6	1.5	4	LZ

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Grand	
Wk Mean	94.74	94.60	94.77	94.84	Month Mean	94.52	Grand Mean	94.52
Avg SDr	2.86	2.91	2.79	3.05	Avg SD	3.07	Avg SD	3.07
SD btwn Labs	3.35	3.55	4.45	4.73	SD btwn Labs	3.88	SD btwn Labs	3.88
Labs Incld	38	40	38	39	SD btwn Wks	3.51	SD btwn Wks	3.51
Labs Excld	3	1	2	1	Labs Incld	40	Labs Incld	40
Labs not Rcvd	0	0	1	1				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	**EN**	Emerson 2200
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
TH	TMI Compression Tester, Model 17-76	**TU**	TMI Universal Crush Tester (TMI K440)

Containerboard Interlaboratory Testing Program
Analysis 216
Ring Crush, 52 lb Linerboard - 52J2
TAPPI Official Test Method T822

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
			Weekly Means			Monthly Results				Cumulative Results				
3M3QLA	125.1	125.0	124.7	125.1	125.0	-0.78	3.5	0.2 L	124.4	-0.78	3.7	1.3 L	8	LC
4XVTY3	127.4	130.7	125.3	129.2	128.1	-0.18	3.4	2.3	128.2	-0.08	3.7	1.9	8	LD
4Y93CA	128.3	128.5	131.7	131.1 L	129.9	0.15	3.4	1.7	130.1	0.26	3.4	1.7	8	LC
7BRNBZ	126.2	131.3	129.2	128.1	128.7	-0.08	5.6	2.1	129.0	0.06	5.2	2.4	8	LD
7KJ6Y4	128.9	129.0	128.9	126.7	128.4	-0.14	2.7	1.1	128.3	-0.07	3.3	0.8 L	8	LD
82MWK7	120.2	120.5 L	120.3 L	119.6 L	120.2	-1.68	2.0	0.4 L	121.8	-1.25	2.3	1.8	8	LD
8P8A8Y	129.5	139.3	NO DATA	NO DATA	134.4	0.99	5.7	6.9	133.5	0.89	5.2	4.0	5	LD
97EKG4	125.0	125.3	129.4	124.2	126.0	-0.59	4.3	2.3	123.4	-0.96	4.7	3.9	8	LD
9M24A4	132.9	129.5	130.8	135.4	132.1	0.56	4.8	2.6	131.8	0.59	4.5	2.2	8	MB
ALK933	130.3	134.0	132.2	130.8	131.8	0.50	3.3	1.7	130.9	0.41	3.2	2.2	8	LD
B2EXXY	131.9	129.8	132.8	135.5	132.5	0.63	4.4	2.3	133.1	0.82	3.9	1.9	8	LD
BUUVV4	136.4	134.5	136.6	134.8	135.6	1.21	3.1	1.1	134.8	1.12	3.9	2.2	8	LD
C69ENX	123.6	124.6	124.4	126.5	124.7	-0.82	3.8	1.2	125.3	-0.61	4.5	1.7	8	LD
D8CM83	125.6 H	123.8 H	124.4 H	125.5 H	124.8	-0.81	9.7	0.8	123.4	-0.96	9.2	2.8	8	TU
DBTURV	136.1	138.9	135.1	133.7	136.0	1.28	4.1	2.2	136.1	1.36	4.4	1.9	8	LC
EE7WDR	133.6	132.6	139.2 H	136.1	135.4	1.17	6.3	2.9	133.3	0.85	5.5	5.5	8	TU
EF2FFT	118.5 *	115.9 *	116.4 *	116.8	116.9	-2.29 *	3.5	1.2	117.1	-2.10 *	3.9	0.9 L	8	LC
EVUAQX	93.4 XH	93.7 XH	92.9 XH	93.6 XH	93.4	-6.70 X	10.3	0.3 L	90.1	-7.03 X	11.4	3.6	8	LD
GNNEKV	130.3	131.6	133.7	133.6	132.3	0.60	5.7	1.6	132.1	0.64	5.3	1.7	8	MB
HYLD8V	124.3	123.9	121.5	121.5	122.8	-1.19	3.8	1.5	123.6	-0.92	4.8	1.5	8	EM
JM3H8L	148.6 X	143.3 *	140.0	116.2 *H	137.0	1.48	7.5	14.3 H	135.5	1.26	8.9	13.0 H	8	LY
K4MLBT	128.5	129.5	132.4	127.8 L	129.6	0.08	3.7	2.0	128.9	0.06	4.3	1.6	8	LY
L4ZKXP	130.7	131.4	126.9	125.0	128.5	-0.12	4.4	3.1	127.7	-0.17	4.6	2.4	8	TH
LY8F9R	113.8 XH	115.9 *	126.2	112.9 *H	117.2	-2.24 *	7.1	6.1	115.1	-2.48 *	6.6	4.9	8	LD
M9BUPJ	132.5	133.3	132.5	127.9	131.5	0.45	3.7	2.5	132.3	0.68	3.6	3.5	8	LD
MALWCH	132.3	134.4	135.0	139.7	135.4	1.17	5.0	3.1	133.7	0.93	5.6	3.0	8	LC
P4BKCM	130.3	96.4 X	95.2 X	128.8	112.7	-3.08 X	2.9	19.5 H	118.5	-1.84	3.1	14.4 H	8	TH
P64D6K	121.5 L	120.6 L	120.8 L	121.0 L	121.0	-1.53	1.0	0.4 L	121.1	-1.37	1.2	0.4 L	8	TU
PHRHDG	126.5	130.4	128.0	129.7	128.7	-0.09	3.1	1.7	129.2	0.10	3.7	1.7	8	LD
PMLCBJ	130.8	133.6	127.8	130.2	130.6	0.28	4.3	2.4	130.7	0.38	4.0	1.7	8	LD
QWQKUP	130.5	131.4	126.8	128.7	129.3	0.04	4.5	2.0	130.3	0.30	4.2	1.9	8	LZ
RMV2NF	125.9	129.8	127.4	133.3	129.1	0.00	4.1	3.2	130.8	0.40	4.0	3.0	8	LD
UEE62K	118.7 *	121.3	120.7	119.7	120.1	-1.69	4.8	1.1	120.8	-1.43	4.6	2.2	8	EM
UZWEXB	132.3	131.8	129.1	129.4	130.7	0.29	4.1	1.6	130.6	0.35	3.8	1.5	8	LD
VZQLGE	128.7 L	128.7 L	128.8 L	128.1 L	128.6	-0.10	1.6	0.3 L	129.0	0.07	1.7	0.5 L	8	MB

Containerboard Interlaboratory Testing Program
Analysis 216
Ring Crush, 52 lb Linerboard - 52J2
TAPPI Official Test Method T822

Report #662
November 2024

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
XARNYH	137.6 *	137.8	137.9	136.8	137.5	1.57	2.9	0.5 L	138.0	1.71	3.0	1.3 L	8	LD
XCWGNA	92.6 XH	112.2 *H	92.6 XH	140.8	109.5	-3.67 X	11.4	22.8 H	123.2	-0.98	8.5	21.0 H	8	LZ
XDDDGA	130.7	136.8	136.0	136.0	134.9	1.08	3.7	2.8	135.1	1.18	4.1	2.7	8	LD
Y4JMA8	127.3	129.5	127.7	128.1	128.1	-0.19	4.3	0.9	131.5	0.53	4.4	3.9	8	LD
Y4JPYC	129.7	134.5	132.7	129.1	131.5	0.44	3.9	2.6	131.1	0.44	3.5	1.8	8	LD
YBFJWA	131.3 L	131.4 L	132.9	132.3 L	132.0	0.54	2.1	0.7	132.0	0.61	2.1	0.7 L	4	LZ

Consensus (All Labs) Results

Wk Mean	128.65	129.38	129.35	128.60	Month Mean	129.12		Grand Mean		128.63
Avg SDr	4.24	4.78	4.57	4.53	Avg SD	4.48		Avg SD		4.65
SD btwn Labs	4.56	6.66	5.57	6.40	SD btwn Labs	5.33		SD btwn Labs		5.48
Labs Incld	37	39	37	39	SD btwn Wks	3.33		SD btwn Wks		5.10
Labs Excld	4	2	3	1	Labs Incld	38		Labs Incld		40
Labs not Rcvd	0	0	1	1						

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	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
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)

Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L2
TAPPI Official Test Method T826

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
	Weekly Means				Monthly Results				Cumulative Results					
2ZWRL6_AL	27.2 *	26.5	26.4 L	26.0	26.5	1.61	1.3	0.5	26.5	1.61	1.3	0.5	4	XX
344UPD	25.3	25.3	25.3	26.3	25.6	0.69	1.3	0.5	25.6	0.69	1.3	0.5	4	LH
38PJ86	24.0	23.5	24.5	25.6	24.4	-0.41	1.5	0.9	24.4	-0.41	1.5	0.9	4	LW
3Q32D4_AL	23.3	24.5	24.8	24.5	24.3	-0.54	1.5	0.7	24.3	-0.54	1.5	0.7	4	AL
4XVTY3	24.6	23.8	24.5	24.3	24.3	-0.50	1.7	0.4	24.3	-0.50	1.7	0.4	4	LU
4Y93CA	24.0	25.0	24.9	24.7	24.6	-0.18	1.3	0.5	24.6	-0.18	1.3	0.5	4	LU
6ZHP69	25.3 H	25.1	25.5	25.2	25.3	0.44	2.0	0.2	25.3	0.44	2.0	0.2	4	LZ
73NCHC_AL	28.6 XL	28.1 XL	25.4 L	27.6 *L	27.4	2.47 *	0.0	1.4	27.4	2.47 *	0.0	1.4	4	AL
7BRNBZ	25.3	24.8	24.9	25.7	25.2	0.35	1.4	0.4	25.2	0.35	1.4	0.4	4	LA
7J8BJ4	25.4 H	24.9	25.2	24.3	24.9	0.10	1.8	0.5	24.9	0.10	1.8	0.5	4	LH
7Y2TD9	24.8	26.3	25.9	25.9	25.7	0.85	1.5	0.6	25.7	0.85	1.5	0.6	4	LH
82MWK7	36.4 X	36.8 XH	34.8 X	35.0 X	35.8	10.34 X	2.2	1.0	35.8	10.34 X	2.2	1.0	4	XX
8BAZNY	24.5	24.0	24.7	24.3	24.4	-0.40	1.5	0.3	24.4	-0.40	1.5	0.3	4	LH
8P8A8Y	25.4	25.5	30.2 XH	29.1 XH	27.6	2.59 *	2.5	2.4 H	27.6	2.59 *	2.5	2.4 H	4	LW
97EKG4	23.0	22.9	22.7 *L	23.1	22.9	-1.79	1.5	0.2	22.9	-1.79	1.5	0.2	4	LZ
97EKG4_AL	39.1 XL	39.5 XL	41.3 XL	39.2 XL	39.8	14.15 X	0.0	1.0	39.8	14.15 X	0.0	1.0	4	AL
9M24A4	23.4	24.6	23.6	26.0	24.4	-0.39	1.5	1.2	24.4	-0.39	1.5	1.2	4	LA
9MLKP8	24.8	25.8	25.5	25.4	25.4	0.50	1.4	0.4	25.4	0.50	1.4	0.4	4	LH
ALK933_AL	22.9	21.9 *	22.7 *	21.7 *	22.3	-2.39 *	1.7	0.6	22.3	-2.39 *	1.7	0.6	4	AL
B2EXXY	26.6	25.6	26.3	26.9	26.4	1.45	1.6	0.5	26.4	1.45	1.6	0.5	4	LH
BJU8YZ	24.8	24.2	23.9	23.1	24.0	-0.78	1.3	0.7	24.0	-0.78	1.3	0.7	4	LA
BUUVV4	25.6	24.0	24.0	24.2	24.4	-0.37	1.4	0.8	24.4	-0.37	1.4	0.8	4	LY
C69ENX	24.3	24.1	24.4	24.4	24.3	-0.49	1.7	0.1	24.3	-0.49	1.7	0.1	4	LY
D8CM83	25.7	24.9	25.0	24.9	25.1	0.29	1.4	0.4	25.1	0.29	1.4	0.4	4	TT
DBTURV	25.2	24.4	24.4	24.8	24.7	-0.09	1.4	0.4	24.7	-0.09	1.4	0.4	4	LU
E2HR7V	23.8	23.7	24.1	23.5 L	23.8	-0.96	1.2	0.3	23.8	-0.96	1.2	0.3	4	LU
EE7WDR	24.3	25.4	25.0	26.5	25.3	0.45	1.4	0.9	25.3	0.45	1.4	0.9	4	LA
EF2FFT	22.4 *	22.5 *	24.2	23.4	23.1	-1.61	1.6	0.8	23.1	-1.61	1.6	0.8	4	LZ
EJZT2W	25.8	24.5	26.1	25.4	25.4	0.59	1.6	0.7	25.4	0.59	1.6	0.7	4	XX
EVUAQX	24.7	25.0	24.9	25.1	24.9	0.11	1.5	0.2	24.9	0.11	1.5	0.2	4	LY
EVUAQX_AL	24.9	25.1	24.8	25.0	25.0	0.12	1.8	0.1	25.0	0.12	1.8	0.1	4	AL
EXL7ER	21.7 *	22.1 *	23.5	21.0 X	22.1	-2.62 *	2.0	1.1	22.1	-2.62 *	2.0	1.1	4	LY
EYXZYY_AL	24.1	25.1	25.4	23.8	24.6	-0.21	1.2	0.8	24.6	-0.21	1.2	0.8	4	XX
FCCKVX	24.8 L	24.4	26.4	23.9	24.9	0.06	1.5	1.1	24.9	0.06	1.5	1.1	4	LA
GNNEKV	23.4	23.0	23.2	22.6	23.1	-1.67	1.4	0.3	23.1	-1.67	1.4	0.3	4	LA

Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L2
TAPPI Official Test Method T826

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
H742LX	25.2	24.9	25.5	25.5	25.3	0.44	1.4	0.3	25.3	0.44	1.4	0.3	4	LU
H7ZJNY	23.9	25.7 H	24.3 H	25.1 H	24.8	-0.05	2.5	0.8	24.8	-0.05	2.5	0.8	4	LH
HM7N9P	24.6	No Data	No Data	No Data	24.6	-0.21	1.2	0.0	24.6	-0.21	1.2	0.0	1	LH
HM7N9P_AL	22.6	No Data	No Data	No Data	22.6	-2.10 *	1.3	0.0	22.6	-2.10 *	1.3	0.0	1	AL
HUBKWW_A	23.9	25.0	24.8	24.0	24.4	-0.37	1.6	0.6	24.4	-0.37	1.6	0.6	4	AL
JM3H8L	26.6 H	27.2 *	21.0 X	26.7 H	25.4	0.53	2.1	2.9 H	25.4	0.53	2.1	2.9 H	4	LZ
K4MLBT	25.2 L	23.6 L	25.7 L	25.7 L	25.1	0.22	0.0	1.0	25.1	0.22	0.0	1.0	4	BK
KEPQGN	24.2	No Data	24.1	No Data	24.1	-0.65	1.3	0.0	24.1	-0.65	1.3	0.0	2	LU
KEPQGN_AL	No Data	24.6	25.4	No Data	25.0	0.13	1.4	0.6	25.0	0.13	1.4	0.6	2	AL
LRATCL	25.4	26.2	25.4 L	25.3	25.6	0.74	1.4	0.4	25.6	0.74	1.4	0.4	4	LY
LY8F9R	25.3 L	25.6 L	24.9 L	25.3 L	25.3	0.44	0.0	0.3	25.3	0.44	0.0	0.3	4	LH
LZ292P_AL	24.7	25.1	24.5	25.1	24.8	0.02	1.7	0.3	24.8	0.02	1.7	0.3	4	AL
M9BUPJ_AL	24.7	23.8	25.6	24.3 L	24.6	-0.21	1.4	0.8	24.6	-0.21	1.4	0.8	4	AL
MALWCH	24.3	24.4	25.0	23.7	24.4	-0.45	1.3	0.5	24.4	-0.45	1.3	0.5	4	LA
P64D6K	20.9 X	21.0 X	21.7 X	21.8 *	21.4	-3.28 X	1.9	0.5	21.4	-3.28 X	1.9	0.5	4	XX
PHRHDG	24.8	25.2	23.8	25.1 L	24.7	-0.10	1.2	0.7	24.7	-0.10	1.2	0.7	4	LA
PMLCBJ_AL	24.4	24.1	24.5	24.5	24.4	-0.43	1.3	0.2	24.4	-0.43	1.3	0.2	4	XX
PZCACG	No Data	25.6	26.1	No Data	25.9	0.99	1.6	0.3	25.9	0.99	1.6	0.3	2	LU
QWQKUP	23.5 L	23.9	24.3 L	24.2 L	24.0	-0.81	1.0	0.4	24.0	-0.81	1.0	0.4	4	XX
RMV2NF_AL	26.4	24.3 L	26.2	25.5	25.6	0.73	1.1	0.9	25.6	0.73	1.1	0.9	4	AL
TNP7MK	25.2	24.1	25.1	24.7	24.8	-0.02	1.6	0.5	24.8	-0.02	1.6	0.5	4	LH
TVM46G	26.2	26.6	25.6	25.9	26.1	1.17	1.5	0.4	26.1	1.17	1.5	0.4	4	LZ
UZWEXB	25.9	25.6	25.7 H	26.3	25.9	0.98	1.6	0.3	25.9	0.98	1.6	0.3	4	LU
VGGJMG	20.5 X	20.1 X	20.3 X	20.0 X	20.2	-4.35 X	1.6	0.2	20.2	-4.35 X	1.6	0.2	4	XX
VPUGRM_AL	30.1 X	28.8 X	30.6 X	28.6 *	29.5	4.44 X	1.8	1.0	29.5	4.44 X	1.8	1.0	4	AL
XCWGNA_AI	38.2 XH	23.9	38.7 X	36.8 X	34.4	9.07 X	2.3	7.0 H	34.4	9.07 X	2.3	7.0 H	4	AL
XDDDGA_AI	23.5	25.3	25.2	25.2	24.8	-0.03	1.6	0.8	24.8	-0.03	1.6	0.8	4	AL
Y4JPYC	24.6	24.9	24.3	25.0	24.7	-0.11	1.7	0.3	24.7	-0.11	1.7	0.3	4	LA
Y9BR7H_AL	23.1 L	25.4	25.5	26.1	25.0	0.20	1.1	1.3	25.0	0.20	1.1	1.3	4	AL
YBFJWA	12.0 XL	12.0 XL	12.0 XL	12.3 XL	12.1	-12.05 X	0.6	0.1	12.1	-12.05 X	0.6	0.1	4	XX
YCCVWJ_AL	26.3	25.2	27.4 *	27.2	26.5	1.63	1.7	1.0	26.5	1.63	1.7	1.0	4	AL

Column groups: Weekly Means (Week 1–4), Monthly Results (Mean, CPV, SD, SD Wks), Cumulative Results (Mean, CPV, SD, SD Wks, Wks), Inst.

Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L2
TAPPI Official Test Method T826

Report #662
November 2024

Consensus (All Labs) Results

Wk Mean	24.64	24.69	24.93	24.98	Month Mean	24.82	Grand Mean		24.82
Avg SDr	1.51	1.54	1.53	1.55	Avg SD	1.55	Avg SD		1.55
SD btwn Labs	1.12	1.07	0.93	1.32	SD btwn Labs	1.06	SD btwn Labs		1.06
Labs Incld	56	56	55	54	SD btwn Wks	0.81	SD btwn Wks		0.81
Labs Excld	8	7	9	7	Labs Incld	59	Labs Incld		59
Labs not Rcvd	2	3	2	5					

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

Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52J2
TAPPI Official Test Method T826

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2ZWRL6_AL	35.4 H	35.7	35.2	36.4 L	35.7	1.55	2.2	0.5	35.1	1.37	1.9	1.2	8	XX
344UPD	35.9	33.4	35.0	35.6	35.0	1.00	2.2	1.1	35.1	1.34	2.4	1.0	8	LH
38PJ86	32.5	32.2	32.9	34.7 H	33.1	-0.47	2.8	1.1	32.9	-0.54	2.4	1.0	8	LW
3Q32D4_AL	31.0	32.0	32.1	32.4	31.9	-1.42	2.4	0.6	32.8	-0.62	2.4	2.0	8	AL
4XVTY3	33.2	33.2	33.4	32.4	33.1	-0.49	2.3	0.5	33.3	-0.22	2.3	0.4	8	LU
4Y93CA	34.0	33.3	33.3	32.8	33.3	-0.26	2.5	0.5	33.3	-0.17	2.4	0.5	8	LU
6ZHP69	33.1	33.4	33.1	33.3	33.2	-0.35	2.4	0.2 L	33.0	-0.48	2.6	0.4	8	LZ
73NCHC_AL	33.9 L	35.0 L	38.0 XL	37.0 L	36.0	1.78	0.0	1.9	40.5	5.99 X	0.0	5.3 H	8	AL
7BRNBZ	36.0	34.3	33.1	33.4	34.2	0.40	2.6	1.3	34.0	0.40	2.8	1.3	8	LA
7J8BJ4	33.1	33.1	34.2	31.6	33.0	-0.54	2.5	1.1	32.9	-0.54	2.7	0.7	8	LZ
7Y2TD9	33.5	35.2	34.2	35.5	34.6	0.70	2.2	0.9	34.9	1.13	2.2	0.7	8	LH
82MWK7	40.3 X	39.2 X	39.6 X	41.2 X	40.1	4.95 X	1.9	0.9	38.4	4.15 X	3.0	2.0	8	XX
8BAZNY	33.2	32.2	32.3	32.8	32.6	-0.81	2.1	0.5	32.9	-0.52	2.3	0.7	8	LH
8P8A8Y	34.9	34.3	39.3 X	38.1 *	36.6	2.30 *	2.5	2.5 H	35.9	2.06 *	2.5	2.0	7	LW
97EKG4	32.3	31.3	32.2	32.0	31.9	-1.36	2.2	0.5	31.8	-1.50	2.3	0.8	8	LZ
97EKG4_AL	41.2 XL	43.0 XL	42.8 XL	40.9 XL	42.0	6.42 X	0.0	1.1	42.5	7.64 X	0.0	1.1	8	XX
9M24A4	34.0	34.0	35.2 H	37.0	35.1	1.08	2.7	1.4	35.0	1.27	2.7	1.0	8	LA
9MLKP8	36.8 *	35.9 *L	36.1 L	36.4	36.3	2.02 *	1.3	0.4	34.9	1.16	1.3	1.8	8	LH
ALK933_AL	33.1	30.5 *	32.2 H	31.3	31.8	-1.48	2.8	1.1	31.8	-1.51	2.8	1.1	4	XX
B2EXXY	33.5	34.7	33.7	34.5	34.1	0.33	2.3	0.6	32.3	-1.02	2.1	2.0	8	LH
BJU8YZ	30.8 *H	34.7	35.5	34.2	33.8	0.09	2.5	2.1	33.4	-0.16	2.5	1.5	8	LA
BUUVV4	34.0	32.7	33.3	32.9	33.2	-0.36	2.2	0.6	33.4	-0.16	2.3	0.5	8	LZ
C69ENX	33.5	32.8	33.2 L	33.7	33.3	-0.29	2.0	0.4	34.0	0.37	2.3	0.8	8	LZ
D8CM83	33.8	33.3	33.4	34.0	33.6	-0.04	2.5	0.3	33.3	-0.20	2.4	0.5	8	TT
DBTURV	33.0	32.7	33.0	33.6	33.1	-0.48	2.5	0.4	33.0	-0.49	2.3	0.8	7	LU
E2HR7V	30.3 *	30.9 *	31.0 *L	31.2 L	30.8	-2.21 *	1.5	0.4	31.1	-2.12 *	1.5	0.5	8	LU
EE7WDR	35.5	33.4	33.1	34.9	34.2	0.42	2.5	1.2	34.0	0.39	2.3	0.9	8	LA
EF2FFT	31.4	31.0	32.1	30.5 *	31.3	-1.87	2.4	0.7	31.0	-2.17 *	2.1	0.5	8	LZ
EJZT2W	33.5	32.9	33.1	34.5	33.5	-0.13	2.2	0.7	33.8	0.21	2.3	0.9	8	XX
EVUAQX	33.8	33.6	34.1	33.9	33.8	0.10	2.0	0.2	32.2	-1.14	1.9	1.8	8	LY
EVUAQX_AL	32.9	33.8	33.1	32.7	33.1	-0.42	2.0	0.5	32.9	-0.50	2.1	0.4	8	AL
EXL7ER	26.3 X	25.7 X	28.3 X	32.5	28.2	-4.24 X	2.4	3.1 H	28.0	-4.74 X	2.2	2.1	8	LW
EYXZYY_AL	34.2	32.8	34.5	33.9	33.9	0.13	1.9	0.7	33.9	0.27	1.9	0.7	4	XX
FCCKVX	35.2	34.2 H	32.8	34.5	34.2	0.37	2.4	1.0	34.4	0.71	2.3	0.8	8	LA
GNNEKV	35.1	33.2	32.4	33.4	33.5	-0.14	2.2	1.1	33.2	-0.25	2.7	1.0	8	LA

Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52J2
TAPPI Official Test Method T826

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
	Weekly Means				**Monthly Results**				**Cumulative Results**					
H742LX	33.9	34.6	34.6	34.7	34.4	0.59	2.4	0.4	34.5	0.82	2.4	0.3 L	8	LU
H7ZJNY	31.7	31.0	32.6	30.4 *H	31.4	-1.75	2.8	0.9	31.5	-1.76	3.1	0.8	8	LH
HM7N9P	31.2	No Data	No Data	No Data	31.2	-1.92	1.8	0.0	31.7	-1.57	1.5	0.7	2	LH
HM7N9P_AL	32.4 L	No Data	No Data	No Data	32.4	-0.99	1.1	0.0	31.0	-2.17 * 1.1		2.0	2	AL
HUBKWW_A	33.0	33.5	33.4	30.8	32.7	-0.78	2.0	1.3	32.7	-0.74	2.2	1.0	8	AL
JM3H8L	33.7 H	31.9	26.0 X	35.4	31.7	-1.50	2.9	4.1 H	33.1	-0.35	2.9	3.2 H	8	LZ
K4MLBT	34.5 L	33.4 L	34.3 L	35.0 L	34.3	0.48	0.0	0.7	34.5	0.82	0.0	0.5	8	BK
KEPQGN	34.3	No Data	34.2	No Data	34.2	0.41	2.3	0.1	33.4	-0.11	2.1	0.9	4	LA
KEPQGN_AL	No Data	34.1	35.6	No Data	34.9	0.93	1.8	1.1	35.0	1.25	1.7	0.6	4	AL
LRATCL	33.5	33.5	36.3 *	33.8	34.3	0.46	2.8	1.4	34.5	0.81	2.4	1.1	8	LU
LY8F9R	34.2 L	34.6 L	34.4 L	35.6 L	34.7	0.80	0.0	0.6	34.4	0.72	0.0	0.7	8	LH
LZ292P_AL	34.5	34.5	33.4	32.9	33.8	0.11	2.3	0.8	33.2	-0.30	2.3	1.7	8	AL
M9BUPJ_AL	31.5	33.5	33.3	34.1	33.1	-0.43	2.2	1.1	33.5	-0.04	2.3	1.2	8	AL
MALWCH	33.2	34.5	32.9	33.4	33.5	-0.14	2.5	0.7	33.9	0.28	2.2	0.8	8	LA
P64D6K	28.4 X	28.5 X	28.4 X	28.2 X	28.4	-4.11 X	2.6	0.1 L	28.8	-4.02 X 2.2		0.6	8	XX
PHRHDG	33.6	32.7	33.7	31.7	32.9	-0.60	2.3	0.9	33.0	-0.47	2.1	0.8	8	LW
PMLCBJ_AL	32.9	31.5	32.4	35.9	33.1	-0.42	2.2	1.9	32.9	-0.57	2.2	1.3	8	XX
PZCACG	No Data	35.1	35.5	No Data	35.3	1.25	2.4	0.3	35.4	1.61	2.6	0.5	6	LU
QWQKUP	33.5	31.6	33.5	32.8	32.9	-0.64	2.3	0.9	32.7	-0.72	2.6	0.8	8	LA
RMV2NF_AL	35.8 L	33.8 L	35.6 L	34.7	35.0	1.00	1.4	0.9	34.3	0.67	2.0	1.2	8	XX
TNP7MK	34.8	33.3	33.7	32.8	33.6	-0.02	2.2	0.8	34.4	0.72	2.3	1.3	8	LH
TVM46G	36.3	34.4	35.4	35.1	35.3	1.23	2.3	0.8	35.1	1.31	2.3	0.6	8	XX
UZWEXB	34.3	34.5	34.4 H	33.9	34.3	0.45	2.9	0.2	34.2	0.61	2.7	0.4	8	LU
VGGJMG	33.7	32.1	33.0	32.8	32.9	-0.60	2.6	0.7	32.9	-0.54	2.6	0.7	4	XX
VPUGRM_AL	41.5 X	41.2 XH	41.4 X	40.5 X	41.1	5.79 X	3.2	0.5	41.0	6.34 X 3.2		0.6	8	AL
XCWGNA_AI	40.4 X	38.8 X	32.1	40.9 X	38.0	3.37 X	2.7	4.1 H	38.1	3.91 X 3.6		3.0 H	8	AL
XDDDGA_AI	33.2	32.8	34.8	33.5	33.6	-0.09	2.3	0.9	34.2	0.59	2.3	0.9	8	AL
Y4JPYC	34.8	34.5	35.6	34.0	34.7	0.80	2.2	0.7	34.7	0.96	2.2	0.5	8	LU
Y9BR7H_AL	32.2	34.5	35.7	34.2	34.1	0.35	2.0	1.4	34.1	0.49	2.1	0.9	8	AL
YBFJWA	16.0 XL	16.6 X	16.5 XL	16.6 XL	16.4	-13.37 X	1.1	0.3	16.4	-14.65 X 1.1		0.3	4	XX
YCCVWJ_AL	36.4	34.4	36.9 *	36.6	36.1	1.87	2.6	1.1	35.1	1.33	2.7	1.4	8	AL

Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52J2
TAPPI Official Test Method T826

Report #662
November 2024

Consensus (All Labs) Results

Wk Mean	33.67	33.39	33.82	33.84	Month Mean	33.68	Grand Mean	33.54
Avg SDr	2.32	2.26	2.35	2.39	Avg SD	2.31	Avg SD	2.31
SD btwn Labs	1.43	1.26	1.28	1.70	SD btwn Labs	1.29	SD btwn Labs	1.17
Labs Incld	57	56	55	55	SD btwn Wks	1.10	SD btwn Wks	1.12
Labs Excld	7	7	9	6	Labs Incld	59	Labs Incld	58
Labs not Rcvd	2	3	2	5				

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

Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42L2
TAPPI Official Test Method T575

Report #662
November 2024

WebCode	Monthly Results Mean	CPV	SD		Cumulative Results Mean	CPV	SD Months		Months	Inst
2ZWRL6_AL	148.0	-1.70	23.70		156.5	-1.34	12.38		4	AL
3Q32D4_AL	187.9	-0.91	23.38		210.3	-0.30	59.00		4	AL
4XVTY3	299.7	1.30	29.26		284.6	1.14	10.55		4	EV
6ZHP69	231.1	-0.05	21.31		227.4	0.03	3.70	L	3	LS
7BRNBZ	263.9	0.59	9.55	L	227.0	0.02	50.48		4	LA
7J8BJ4	240.2	0.13	21.11		248.7	0.44	9.89		4	LS
7Y2TD9	259.0	0.50	18.20	L	262.9	0.72	6.00	L	4	EV
8P8A8Y	144.3	-1.77	7.12	L	139.1	-1.67	13.70		3	XX
97EKG4	185.6	-0.96	15.60	L	93.5	-2.55 *	107.50	H	4	LA
97EKG4_AL	174.8	-1.17	18.34	L	178.7	-0.91	13.32		4	AL
9M24A4	289.6	1.10	51.41		287.7	1.20	21.11		4	LA
BUUVV4	239.6	0.11	28.95		261.7	0.69	17.25		4	LS
C69ENX	268.0	0.68	16.25	L	266.3	0.78	5.85	L	4	EV
DBTURV	248.5	0.29	201.79	H	213.6	-0.23	61.78		3	EV
E2HR7V	192.2	-0.83	16.84	L	188.7	-0.72	6.06	L	4	EV
EE7WDR	299.6	1.30	32.54		259.2	0.65	51.61		4	LA
EF2FFT	288.5	1.08	22.27		276.4	0.98	10.28		4	EV
EVUAQX	238.2	0.09	12.44	L	239.3	0.26	3.86	L	4	XX
EVUAQX_AL	258.3	0.48	15.86	L	246.7	0.41	16.83		4	AL
EXL7ER	202.8	-0.61	9.82	L	219.8	-0.11	13.06		4	LS
FCCKVX	243.4	0.19	39.14		269.6	0.85	17.71		4	LA
GNNEKV	289.9	1.11	35.87		283.3	1.11	9.04		4	LA
HM7N9P_AL	257.5	0.47	20.79		245.9	0.39	10.79		4	AL
HUBKWW_AL	258.8	0.49	28.78		245.9	0.39	13.58		4	AL
JVYFUP	322.6	1.76	50.81		301.3	1.46	16.25		4	LS
KEPQGN_AL	153.2	-1.60	16.68	L	162.9	-1.21	7.86		4	AL
LZ292P_AL	244.8	0.22	20.02		243.0	0.33	10.54		4	AL
PHRHDG	259.4	0.50	30.47		241.3	0.30	47.91		4	LA
VPUGRM_AL	151.7	-1.63	16.89	L	164.1	-1.19	15.25		4	AL
XCWGNA_AL	135.1	-1.95 *	15.54	L	133.0	-1.79	3.89	L	4	AL
XDDDGA	226.0	-0.16	21.16		227.5	0.03	2.42	L	4	LS
XDDDGA_AL	256.1	0.44	43.24		265.3	0.76	15.99		4	AL
Y9BR7H_AL	259.4	0.51	12.70	L	260.6	0.67	3.01	L	4	AL
YCCVWJ_AL	0.4	-4.62 X	0.05	L	142.7	-1.60	164.45	H	4	AL

Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42L2
TAPPI Official Test Method T575

Report #662
November 2024

Consensus (All Labs) Results

Month Mean	233.87	Grand Mean	225.72
Avg SD	43.34	Avg SD Months	41.03
SD btwn Labs	50.51	SD btwn Labs	51.81
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 - 42L2
TAPPI Official Test Method T538

Report #662
November 2024

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2ZWRL6_AL	374.3	-0.49	5.33		374.3	-0.49	0.00	1	XX
4Y93CA	392.1	1.14	7.65		392.1	1.14	0.00	1	XX
73NCHC_AL	90.5	-26.47 X	5.71		90.5	-26.47 X	0.00	1	AL
97EKG4_AL	371.8	-0.72	7.64		371.8	-0.72	0.00	1	AL
ALK933	395.7	1.47	5.40		395.7	1.47	0.00	1	PP
BJU8YZ	381.1	0.13	7.75		381.1	0.13	0.00	1	XX
BUUVV4	385.4	0.52	6.65		385.4	0.52	0.00	1	XX
EVUAQX_AL	394.5	1.36	6.45		394.5	1.36	0.00	1	AL
EYXZYY_AL	383.5	0.35	6.47		383.5	0.35	0.00	1	XX
HM7N9P_AL	369.9	-0.90	4.58		369.9	-0.90	0.00	1	AL
HUBKWW_AL	368.1	-1.06	2.60	L	368.1	-1.06	0.00	1	AL
HYLD8V	352.8	-2.46 *	3.73		352.8	-2.46 *	0.00	1	TS
LZ292P_AL	384.9	0.48	2.73	L	384.9	0.48	0.00	1	AL
M9BUPJ_AL	376.8	-0.26	5.73		376.8	-0.26	0.00	1	AL
PMLCBJ_AL	378.7	-0.09	6.15		378.7	-0.09	0.00	1	XX
RMV2NF_AL	380.4	0.07	11.08	H	380.4	0.07	0.00	1	AL
XDDDGA_AL	417.9	3.50 X	7.56		417.9	3.50 X	0.00	1	AL
YCCVWJ_AL	385.0	0.49	5.33		385.0	0.49	0.00	1	AL

Consensus (All Labs) Results

Month Mean	379.69		Grand Mean	379.69
Avg SD	6.29		Avg SD Months	0.00
SD btwn Labs	10.92		SD btwn Labs	10.92
Labs Incld	16		Labs Incld	16

Key to Instrument Codes Reported by Participants

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

Report #662
November 2024

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4XVTY3	161.0	0.43	6.04		146.3	0.12	10.74	4	TM
4Y93CA	190.0	1.81	6.90		170.2	1.50	13.25	4	HY
7Y2TD9	169.8	0.85	6.72		153.6	0.54	11.64	4	TM
A7699X	145.6	-0.31	20.40 H		142.7	-0.09	11.87	4	TM
ALK933	172.6	0.98	6.27		159.5	0.88	11.84	3	HY
BJU8YZ	109.9	-2.01 *	4.66		112.3	-1.84	8.01	4	SC
C69ENX	154.0	0.09	14.78		149.2	0.29	10.39	4	HZ
D8CM83	128.1	-1.14	6.70		123.4	-1.19	5.03	3	TM
DBTURV	124.4	-1.32	11.78		118.8	-1.46	9.53	3	TM
E2HR7V	141.9	-0.49	9.64		128.9	-0.88	11.35	4	TM
EVUAQX	132.4	-0.94	4.98		126.8	-1.00	4.01	4	TM
H7ZJNY	173.6	1.03	21.82 H		148.0	0.22	18.36	4	HY
HUBKWW	141.6	-0.50	10.55		128.5	-0.91	9.39	4	TM
JVYFUP	161.4	0.45	7.77		154.2	0.58	6.98	4	HY
M9BUPJ	141.9	-0.48	8.11		139.3	-0.28	3.99	4	TM
MALWCH	142.8	-0.44	1.48 L		138.2	-0.35	5.12	4	TM
PHRHDG	185.0	1.57	7.91		178.8	2.00 *	8.74	4	HY
PMLCBJ	158.0	0.28	9.03		157.6	0.78	1.69	4	HY
RMV2NF	163.0	0.52	7.78		157.1	0.75	5.91	4	LZ
XCWGNA	149.4	-0.13	8.79		146.2	0.12	15.95	4	TM
XDDDGA	124.8	-1.30	8.58		127.6	-0.96	8.01	4	TM
Y4JPYC	174.2	1.06	12.87		164.5	1.17	7.83	4	HZ

Consensus (All Labs) Results

Month Mean	152.06	Grand Mean	144.15
Avg SD	10.37	Avg SD Months	9.89
SD btwn Labs	20.97	SD btwn Labs	17.34
Labs Incld	22	Labs Incld	22

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	148.18	19.70	3.89	17
Modified Scott Bond Mechanics	179.32	14.35	27.26	3

Containerboard Interlaboratory Testing Program
Analysis 231
Internal Bond, 42 lb Linerboard - 42L
TAPPI Official Test Method T569

Report #662
November 2024

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		

Containerboard Interlaboratory Testing Program
Analysis 234
COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42L
TAPPI Official Test Method T815

Report #662
November 2024

	Monthly Results				Cumulative Results			
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months
3Q32D4	25.2	-0.84	1.48		25.7	-1.01	2.26	4
4XVTY3	23.2	-1.43	2.59		27.3	-0.34	3.54	4
4Y93CA	29.2	0.34	1.61		27.2	-0.38	1.51	4
6ZHP69	27.6	-0.14	0.55		27.5	-0.24	0.31 L	3
73NCHC	23.6	-1.31	1.52		24.7	-1.39	0.76	4
7J8BJ4	20.8	-2.14 *	0.84		21.7	-2.63 *	0.62	4
7Y2TD9	29.8	0.51	2.68		29.6	0.59	1.87	4
8P8A8Y	31.4	0.98	3.58		31.7	1.44	0.64	3
9M24A4	27.4	-0.19	2.41		28.2	0.04	1.61	4
ALK933	28.0	-0.02	3.81		26.9	-0.52	2.69	3
BHYPXY	25.6	-0.72	2.70		28.5	0.15	3.23	4
BJU8YZ	26.0	-0.61	0.71		26.5	-0.67	0.50	4
BUUVV4	35.4	2.16 *	1.92		32.1	1.63	3.71	4
C69ENX	27.2	-0.25	2.59		26.8	-0.55	2.17	4
DBTURV	26.8	-0.37	1.79		29.5	0.57	3.90	3
E2HR7V	34.2	1.81	1.48		32.0	1.58	2.17	4
EF2FFT	30.0	0.58	3.66		28.1	-0.01	1.86	4
EVUAQX	28.3	0.08	2.57		27.2	-0.37	1.52	4
EXL7ER	28.4	0.10	0.55		28.7	0.21	0.82	4
H7ZJNY	22.0	-1.78	2.24		26.0	-0.87	2.74	4
HUBKWW	31.6	1.04	4.28		30.0	0.76	1.64	4
JVYFUP	29.0	0.28	1.00		30.7	1.03	1.84	4
KEPQGN	28.6	0.16	0.89		29.6	0.60	1.92	4
LN8PMJ	29.4	0.40	0.89		28.4	0.09	0.91	4
LY8F9R	21.8	-1.84	1.75		24.8	-1.38	2.41	4
LZ292P	31.3	0.96	3.11		29.1	0.39	2.35	4
P4BKCM	30.2	0.63	3.80		31.7	1.44	2.16	4
PHRHDG	31.0	0.87	2.55		31.1	1.21	0.50	4
PMLCBJ	26.6	-0.43	3.21		28.5	0.15	1.65	4
PZCACG	26.4	-0.49	1.52		27.8	-0.14	2.39	4
RMV2NF	23.6	-1.31	2.07		22.7	-2.24 *	2.25	4
UA2JWJ	28.6	0.16	0.89		27.8	-0.16	0.89	4
VPUGRM	28.4	0.10	1.78		27.2	-0.40	1.88	4
XCWGNA	32.0	1.17	3.69		30.7	1.03	1.32	4
XDDDGA	29.2	0.34	3.27		26.9	-0.50	2.45	4
YCCVWJ	32.2	1.22	0.84		30.3	0.87	1.56	4

Consensus (All Labs) Results

Month Mean	28.06	Grand Mean	28.13
Avg SD	2.38	Avg SD Months	2.06
SD btwn Labs	3.39	SD btwn Labs	2.45
Labs Incld	36	Labs Incld	36

Key to Instrument Codes Reported by Participants

ZZ   Instruments No Longer Tracked

Containerboard Interlaboratory Testing Program
Analysis 237
Air Resistance, 42 lb Linerboard - 42L2
TAPPI Official Test Method T460

Report #662
November 2024

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2ZWRL6_AL	32.1	-0.47	2.54		34.1	0.39	1.51	4	XX
3Q32D4_AL	33.1	0.13	1.90		32.2	-0.94	0.74	4	AL
4XVTY3	32.1	-0.46	2.81		35.3	1.25	3.28	4	LW
4Y93CA	33.4	0.28	1.92		34.0	0.30	1.51	4	TP
6EHBR4	35.0	1.17	2.35		33.6	0.04	1.05	4	LP
6ZHP69	33.5	0.34	1.90		33.5	-0.05	0.15 L	3	LP
73NCHC_AL	31.3	-0.91	2.18		50.5	11.75 X	40.14 H	4	AL
7BRNBZ	30.8	-1.17	1.88		32.5	-0.75	1.62	4	LA
7J8BJ4	29.0	-2.18 *	2.23		30.7	-1.98 *	2.16	4	TD
7Y2TD9	30.6	-1.30	1.37		33.4	-0.10	2.07	4	LP
8P8A8Y	31.8	-0.59	2.04		31.8	-1.21	0.75	3	LP
97EKG4_AL	34.2	0.73	2.52		32.9	-0.42	1.06	4	XX
9M24A4	31.0	-1.07	1.59		30.8	-1.90	1.23	4	LA
ALK933	32.7	-0.11	4.40 H		30.4	-2.18 *	9.31 H	3	TP
B2EXXY	34.4	0.84	1.43		35.2	1.17	1.65	4	XX
BHYPXY_AL	34.1	0.67	3.97 H		33.3	-0.15	0.73	3	AL
BUUVV4	35.2	1.31	3.23		34.8	0.86	0.99	4	GA
C69ENX	34.1	0.70	2.23		35.1	1.06	1.15	4	LP
D8CM83	31.6	-0.74	3.93 H		33.8	0.20	2.02	3	GA
DAXBPU	32.4	-0.28	1.75		33.8	0.19	1.19	4	LP
DBTURV_AL	33.5	0.36	1.71		33.4	-0.10	0.80	4	AL
E2HR7V_AL	32.1	-0.43	2.48		34.0	0.35	1.44	4	AL
EE7WDR	32.3	-0.35	2.20		33.5	-0.04	1.01	4	LA
EVUAQX	31.3	-0.87	1.64		33.4	-0.08	1.40	4	LP
EVUAQX_AL	34.4	0.87	2.09		36.6	2.14 *	1.57	4	AL
EXL7ER	22.8	-5.67 X	2.35		23.6	-6.90 X	1.25	4	XX
EYXZYY_AL	30.8	-1.18	2.71		32.8	-0.54	1.99	3	XX
FCCKVX	34.2	0.70	1.90		34.4	0.59	0.96	4	LA
GNNEKV	32.0	-0.50	1.72		32.2	-0.91	0.34	4	LA
HM7N9P_AL	34.3	0.77	1.38		34.2	0.44	0.80	4	AL
HUBKWW_AL	34.0	0.61	1.86		34.0	0.36	0.66	4	AL
JVYFUP	34.1	0.66	0.65 L		34.0	0.29	0.81	4	LP
KEPQGN	35.2	1.27	2.62		36.2	1.82	1.51	4	GG
KEPQGN_AL	33.0	0.06	1.41		33.1	-0.30	0.76	4	AL
LZ292P_AL	31.1	-1.03	2.79		31.2	-1.61	0.81	4	AL
M9BUPJ_AL	32.9	0.02	2.33		34.0	0.35	0.88	4	AL
PHRHDG	30.8	-1.17	1.62		32.5	-0.73	1.31	4	LP
PMLCBJ	33.5	0.32	3.59		33.9	0.24	0.88	4	TP
PMLCBJ_AL	31.9	-0.55	2.22		32.6	-0.64	0.61	4	XX

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

Report #662
November 2024

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
PZCACG	35.0	1.16	2.87		36.0	1.74	1.21	4	GG
RMV2NF_AL	35.9	1.69	0.97 L		35.7	1.51	1.63	4	AL
UA2JWJ	28.1	-2.67 *	2.47		30.7	-1.97 *	2.63	4	TD
VPUGRM_AL	37.6	2.64 *	2.36		38.4	3.38 X	0.85	4	AL
XARNYH	35.1	1.22	1.25		34.9	0.95	0.29 L	4	XX
XCWGNA_AL	32.5	-0.22	2.43		33.5	-0.03	1.01	4	AL
XDDDGA_AL	32.7	-0.13	1.56		33.4	-0.09	1.15	4	AL
Y9BR7H_AL	32.3	-0.33	1.56		34.6	0.71	1.51	4	AL
YBFJWA	32.2	-0.39	1.14		33.0	-0.37	0.70	3	XX
YCCVWJ_AL	33.9	0.56	2.35		33.8	0.18	0.55	4	AL

Consensus (All Labs) Results

Month Mean	32.89		Grand Mean	33.53
Avg SD	2.30		Avg SD Months	1.91
SD btwn Labs	1.79		SD btwn Labs	1.44
Labs Incld	48		Labs Incld	46

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		LW	L&W Gurley Densometer, Oil Flotation
TD	TMI Gurley Densometer		TP	Technidyne Profile/ plus Roughness & Porosity
XX	Instrument make/model not specified by lab			

Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T809

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
2669WE	62.6	59.1	60.9	57.1	59.9	0.54	3.8	2.4	59.4	0.48	3.7	1.5	16	LD
2WB34D	57.6 L	57.6 L	57.8 L	57.6 L	57.7	-0.12	0.6	0.1 L	57.6	-0.13	0.6	0.1 L	16	LD
344UPD	56.9	54.4	55.5	57.6	56.1	-0.56	3.2	1.4	55.9	-0.67	3.2	1.3	16	EM
3Q32D4	54.4	55.8	54.6	52.5	54.3	-1.07	3.7	1.4	56.6	-0.45	4.2	2.0	16	LZ
4XVTY3	56.5	56.6	57.7	57.2	57.0	-0.30	4.5	0.6	56.1	-0.60	3.7	1.2	16	LD
4Y93CA	54.9	56.0	59.6	56.1	56.7	-0.40	4.1	2.0	57.6	-0.12	4.2	1.7	16	LC
6EHBR4	57.3	58.5	57.9	58.1	57.9	-0.04	3.0	0.5	59.6	0.54	3.1	2.8	16	LD
6ZHP69	57.8	58.0	57.9	58.1 L	58.0	-0.03	2.0	0.1 L	57.7	-0.07	2.1	0.5 L	12	LD
7KJ6Y4	58.4	56.4	58.5	56.0	57.3	-0.20	4.2	1.3	57.5	-0.13	3.7	0.8	16	LD
8BAZNY	61.2	60.1	61.2	61.6	61.0	0.85	4.3	0.7	61.5	1.18	4.5	2.0	16	LD
8P8A8Y	66.2 *	66.2 *	57.5	57.0	61.7	1.06	4.0	5.2 H	60.6	0.85	3.9	3.8	11	LD
97EKG4	53.2	56.7	55.1	53.0	54.5	-1.03	3.1	1.7	56.5	-0.48	3.6	2.4	16	LD
9M24A4	61.3	52.6	59.2	56.1	57.3	-0.21	4.7	3.8	54.6	-1.11	6.8	3.6	16	MB
9MLKP8	51.2	55.6	53.1	55.2	53.8	-1.23	3.0	2.1	54.2	-1.22	3.3	1.5	16	LD
ALK933	55.5	56.1	56.4	53.8	55.4	-0.75	3.3	1.2	55.2	-0.90	3.5	1.6	11	LD
B2EXXY	54.6	56.5	No Data	No Data	55.6	-0.72	3.2	1.4	56.2	-0.58	3.1	1.8	10	LD
BUUVV4	60.5	61.6 L	63.1	61.5	61.6	1.03	2.7	1.1	58.1	0.06	3.7	2.8	16	LZ
C69ENX	55.5	61.6	59.9	58.7	58.9	0.26	4.6	2.6	55.3	-0.87	4.2	3.1	16	LZ
DAXBPU	56.8	58.8	54.6	58.4	57.1	-0.27	3.0	1.9	57.3	-0.21	3.4	1.9	16	LD
DBTURV	58.9	57.2	58.2	58.0	58.1	0.01	3.6	0.7	59.6	0.55	3.7	2.5	13	LC
EE7WDR	62.3	55.5	65.6	62.4	61.4	0.98	4.7	4.3 H	62.6	1.53	4.8	3.5	16	TU
EF2FFT	52.0	54.8	55.0	54.8	54.1	-1.13	3.4	1.4	55.4	-0.82	3.4	2.0	16	EN
EJZT2W	58.6 L	59.7 L	58.4 L	60.8 L	59.4	0.37	0.6	1.1	60.8	0.93	1.4	2.8	16	XX
EVUAQX	52.3	51.7	52.3	52.9	52.3	-1.66	5.6	0.5	51.5	-2.11 *	4.3	1.3	16	LD
HEDDYU	49.3 *	52.7	49.2 *	53.4 H	51.2	-1.98 *	4.7	2.2	50.3	-2.51 *	4.2	2.4	16	TH
HUBKWW	56.7	54.6	55.9	54.4	55.4	-0.76	3.2	1.1	55.6	-0.78	3.4	1.6	16	LD
JM3H8L	60.3	60.1	No Data	65.8 *	62.1	1.16	4.5	3.2	58.9	0.31	4.0	3.2	15	LD
JVYFUP	No Data	No Data	No Data	56.8	56.8	-0.37	2.7	0.0	57.5	-0.15	2.2	0.8	4	LD
K2JVXL	57.5	57.9	55.7	56.0	56.8	-0.37	3.9	1.1	57.1	-0.27	3.9	0.9	16	LD
K4MLBT	57.3	59.3	59.5	61.8	59.5	0.41	3.2	1.8	58.2	0.08	3.6	1.6	16	LZ
LRATCL	59.2	59.3	61.5	59.3	59.8	0.51	4.0	1.1	58.9	0.31	4.1	1.5	16	LD
LW4MET	61.0 H	61.6 H	62.7	61.8 H	61.8	1.08	5.8	0.7	59.7	0.57	5.6	2.2	16	LD
LY8F9R	58.7	59.1	59.9	64.3	60.5	0.71	3.4	2.6	60.7	0.91	3.4	1.7	16	LD
MALWCH	65.9 *	61.2 H	64.1	67.3 *	64.6	1.90	5.2	2.6	62.2	1.40	3.7	2.3	16	LC
P64D6K	50.3 L	50.8 *L	50.7 L	51.0 L	50.7	-2.12 *	1.0	0.3 L	53.7	-1.37	2.2	4.2	16	TU

Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T809

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
					Monthly Results				Cumulative Results					
PDEFQL	63.8	65.3 *	61.1	57.6	62.0	1.12	4.2	3.4	60.8	0.93	4.4	2.8	12	LD
PGWVYT	57.4	59.8	60.1	63.4	60.2	0.61	4.2	2.4	59.7	0.56	4.4	2.2	16	LD
PHRHDG	60.1	63.6	65.2 H	58.2	61.7	1.06	5.6	3.2	60.1	0.71	4.5	2.7	16	XX
PMLCBJ	55.1	57.4	58.0	58.2	57.2	-0.26	3.3	1.4	55.8	-0.71	3.5	1.8	16	LD
QBBZXN	66.8 *	66.9 *	65.2	66.4 *	66.3	2.38 *	4.7	0.8	66.1	2.66 *	5.6	1.7	16	TX
RMV2NF	52.8	52.5	50.1 *	53.7	52.3	-1.67	3.1	1.6	53.3	-1.52	3.3	2.3	16	LD
T29WGG	62.3	62.5	63.2	62.6	62.6	1.32	3.6	0.4	62.5	1.48	3.4	1.4	16	TB
T9UPTF	62.3	64.0	62.2	60.7	62.3	1.23	3.4	1.3	62.8	1.59	3.5	0.9	16	LC
TNP7MK	58.0	58.1	59.9	60.1	59.0	0.28	3.7	1.1	59.9	0.63	3.5	1.2	16	LD
UA2JWJ	54.3	54.2	53.1 H	54.0	53.9	-1.20	5.5	0.5	56.4	-0.51	4.6	2.2	16	LZ
UZWEXB	57.9	58.6	59.2	59.6	58.8	0.22	4.5	0.8	59.6	0.53	3.8	1.4	16	LD
VZQLGE	58.8 L	58.5	58.6	58.5	58.6	0.16	1.7	0.1 L	58.3	0.13	1.7	0.4 L	16	MB
Y4JPYC	55.4	57.7	53.8	54.6	55.4	-0.78	2.8	1.7	56.0	-0.62	2.9	1.3	16	LD

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative	
Wk Mean	57.82	58.14	58.19	58.16	Month Mean	58.05	Grand Mean	57.94	
Avg SDr	4.04	3.85	3.71	3.72	Avg SD	3.82	Avg SD	3.80	
SD btwn Labs	4.03	3.67	4.00	3.81	SD btwn Labs	3.47	SD btwn Labs	3.06	
Labs Incld	47	47	45	47	SD btwn Wks	1.94	SD btwn Wks	2.14	
Labs Excld	0	0	0	0	Labs Incld	48	Labs Incld	48	
Labs not Rcvd	1	1	3	1					

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		

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
3Q32D4	62.5	60.6	55.4 XH	64.8	60.8	-2.28 *	5.0	4.0 H	62.1	-1.99 *	5.1	2.9	16	LZ
4Y93CA	68.0	69.1	68.3	65.5	67.7	0.27	3.5	1.5	68.2	0.51	3.2	1.7	16	LC
6EHBR4	72.5	70.0	70.2	69.5	70.6	1.33	2.6	1.3	70.2	1.34	2.9	1.3	16	LD
6ZHP69	66.3	66.9	66.7	67.8	66.9	-0.02	2.2	0.6	67.0	0.04	2.2	0.5 L	12	LD
8P8A8Y	63.6	63.0	68.5	66.2	65.3	-0.61	4.1	2.5	65.4	-0.64	4.0	2.2	11	LD
97EKG4	64.4	64.7	63.2 *	63.1	63.9	-1.16	3.6	0.8	62.9	-1.65	4.1	1.9	16	XX
ALK933	68.1	68.2	69.6	70.3	69.0	0.76	4.1	1.1	68.8	0.79	3.4	1.6	11	LD
DAXBPU	68.5	68.7	69.6	68.9	68.9	0.73	4.0	0.5	67.5	0.25	3.5	1.4	16	LD
DBTURV	70.4	69.8 L	67.6	68.3	69.0	0.76	2.4	1.3	67.8	0.35	3.9	3.7	13	LC
EJZT2W	70.1 L	70.9 L	69.2 L	71.8 L	70.5	1.32	1.0	1.1	70.6	1.53	1.1	1.2	16	XX
EVUAQX	58.0 *	57.8 *H	57.6 XH	58.0 *H	57.9	-3.40 X	6.4	0.2 L	57.8	-3.72 X	6.3	1.2	16	LD
HUBKWW	67.9	70.0	71.0	68.8	69.4	0.91	4.2	1.4	67.0	0.04	3.8	3.4	16	LD
K4MLBT	64.5	64.7	67.0	61.5	64.4	-0.94	4.1	2.3	64.4	-1.02	3.7	1.6	16	LZ
PHRHDG	65.3	68.9	65.6	66.7	66.6	-0.13	3.6	1.6	68.7	0.74	3.3	1.9	16	XX
PMLCBJ	70.9	70.7	68.4	71.4	70.3	1.26	2.7	1.3	70.4	1.43	3.4	1.1	16	LD
RMV2NF	62.4	64.7	67.0 H	63.5	64.4	-0.96	4.2	2.0	65.6	-0.53	3.6	1.7	16	LD
UZWEXB	66.8	66.9	65.3	65.5	66.1	-0.31	3.9	0.8	67.0	0.03	4.1	1.2	16	LD
VZQLGE	65.0 L	65.9	66.0	65.4	65.6	-0.52	1.7	0.4	65.3	-0.65	1.7	0.6	16	MB
YBFJWA	65.2	66.2	66.2	66.0 L	65.9	-0.40	2.2	0.5	65.5	-0.57	1.8	0.8	12	LZ

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4						
Wk Mean	66.33	66.72	67.61	66.48	Month Mean	66.97		Grand Mean	66.92	
Avg SDr	4.07	3.47	3.02	3.34	Avg SD	3.45		Avg SD	3.42	
SD btwn Labs	3.50	3.54	2.02	3.46	SD btwn Labs	2.68		SD btwn Labs	2.44	
Labs Incld	19	19	17	19	SD btwn Wks	1.64		SD btwn Wks	1.91	
Labs Excld	0	0	2	0	Labs Incld	18		Labs Incld	18	
Labs not Rcvd	0	0	0	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		

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

Report #662
November 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
2669WE	42.0	39.7	38.3	37.2	39.3	-1.63	2.6	2.0	39.9	-1.16	3.2	1.5	16	LD
2WB34D	44.5 L	44.4 L	44.5 L	44.4 L	44.4	1.16	0.7	0.0 L	43.9	1.34	0.6	0.4 L	16	LD
4Y93CA	43.6	41.7	39.6	41.6	41.6	-0.36	2.7	1.7	41.9	0.13	3.4	1.8	16	LC
6EHBR4	44.8	41.3	40.8	41.5	42.1	-0.10	2.6	1.8	41.5	-0.13	2.7	1.5	16	LD
7KJ6Y4	42.5	42.8 H	40.9	41.4	41.9	-0.22	3.6	0.9	41.8	0.07	3.4	1.0	16	LD
8BAZNY	43.3	42.2	39.6	42.6	41.9	-0.21	2.9	1.6	42.1	0.24	3.6	1.4	16	LD
97EKG4	39.9	39.9	42.3	41.2	40.8	-0.81	3.5	1.2	40.3	-0.90	3.5	1.2	16	LD
9M24A4	43.5 H	44.4	43.0	41.9	43.2	0.48	4.6	1.1	43.7	1.20	3.5	1.0	16	MB
ALK933	42.0	40.7	42.3	40.2	41.3	-0.55	3.0	1.0	41.7	-0.05	3.8	1.5	12	LD
B2EXXY	44.8	46.2	43.0	44.7	44.7	1.30	2.8	1.3	44.4	1.68	2.8	1.6	16	LD
BUUVV4	41.0	43.1	42.5	40.9	41.9	-0.24	2.8	1.1	41.5	-0.16	2.9	1.1	16	LD
DAXBPU	38.9	38.3	38.1	40.5	39.0	-1.81	2.4	1.1	40.0	-1.09	3.1	1.6	16	LD
EYXZYY	37.5	36.9 *	38.0	43.2 L	38.9	-1.87	2.4	2.9 H	39.1	-1.64	3.5	2.5	16	LD
JM3H8L	45.9	47.3 * No Data		44.5	45.9	1.95 *	3.7	1.4	43.1	0.85	4.0	4.0 H	15	LZ
K2JVXL	43.5 L	43.1 L	43.8	43.6	43.5	0.63	1.5	0.3	43.6	1.17	2.6	0.9	16	LC
L4ZKXP	40.7	42.3	39.2	40.3	40.6	-0.92	2.1	1.3	41.0	-0.49	2.5	1.3	16	TH
LW4MET	42.3	46.7	43.1	43.3	43.8	0.82	3.2	2.0	43.2	0.93	3.6	2.1	16	LD
LY8F9R	34.0 *	30.9 X	32.6 *	33.1 *	32.6	-5.25 X	3.7	1.3	33.0	-5.43 X	3.9	1.4	16	XX
P64D6K	35.0 *L	34.8 XL	34.9 L	34.6 *L	34.8	-4.07 X	1.1	0.2 L	39.7	-1.30	2.0	3.1	16	TU
PDEFQL	44.7	43.8	41.3	46.5	44.1	0.95	3.3	2.2	44.3	1.61	3.6	2.4	12	EM
PGWVYT	44.3	41.8	46.3 H	45.5	44.5	1.16	4.1	2.0	42.2	0.32	4.0	2.1	16	LD
PHRHDG	41.2	43.4	39.7	41.9	41.5	-0.42	3.2	1.5	41.2	-0.31	3.5	1.3	16	XX
PMLCBJ	41.7	41.2	42.3	40.7	41.5	-0.46	3.1	0.7	41.0	-0.46	2.8	0.8	16	LD
QBBZXN	43.8	42.3 H	44.5	45.2	43.9	0.87	4.3	1.2	40.4	-0.83	4.0	3.2	16	LZ
QYAW9K	34.4 *H	31.8 X	33.9 *	33.8 *	33.5	-4.78 X	3.9	1.2	38.0	-2.34 *	4.3	3.7	16	XX
RMV2NF	41.7	42.4	40.1	40.8	41.3	-0.57	3.0	1.0	42.1	0.23	3.3	1.1	16	LD
T29WGG	42.8	43.0	42.2	43.8	43.0	0.35	2.4	0.6	42.1	0.21	2.2	1.1	16	XX
T9UPTF	44.3	43.4	44.8	45.1	44.4	1.13	2.7	0.8	43.1	0.82	3.3	1.5	16	XX
VZQLGE	40.6	40.2	40.2	40.6	40.4	-1.04	1.7	0.2 L	40.7	-0.66	1.7	0.6	16	MB
Y4JPYC	41.5	44.6	43.4	42.9	43.1	0.41	2.8	1.3	42.9	0.73	2.9	1.3	16	LD

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

Report #662
November 2024

Consensus (All Labs) Results

Wk Mean	41.69	42.49	40.86	41.58	Month Mean	42.31	Grand Mean		41.74
Avg SDr	3.01	3.14	3.12	2.71	Avg SD	2.99	Avg SD		3.21
SD btwn Labs	3.08	2.38	3.24	3.30	SD btwn Labs	1.84	SD btwn Labs		1.61
Labs Incld	30	27	29	30	SD btwn Wks	1.42	SD btwn Wks		1.90
Labs Excld	0	3	0	0	Labs Incld	27	Labs Incld		29
Labs not Rcvd	0	0	1	0					

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T826

Report #662
November 2024

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
344UPD	13.9	14.1	13.5	15.0 *	14.1	0.61	1.1	0.6	14.1	0.71	1.1	0.5	16	LH
4XVTY3	13.3	13.2	13.2	13.1	13.2	-0.54	1.0	0.1 L	13.4	-0.71	1.0	0.2 L	16	LU
4Y93CA	13.5	13.6	13.2	13.4	13.4	-0.20	1.1	0.2	13.6	-0.34	1.0	0.2 L	16	LU
6ZHP69	13.8	13.5	13.7	13.9	13.7	0.12	1.0	0.2	13.6	-0.31	1.1	0.2 L	12	LA
8BAZNY	13.5	13.8	13.2	13.6	13.5	-0.08	1.1	0.2	13.5	-0.45	1.0	0.4	16	XX
97EKG4	12.8	12.4	14.1	13.2	13.1	-0.57	1.2	0.7	12.9	-1.53	1.1	0.6	16	LZ
9M24A4	13.6 H	13.1	14.2	13.4	13.6	-0.04	1.3	0.4	13.9	0.36	1.2	0.7	16	LA
ALK933	12.8	13.1	13.1	13.2	13.0	-0.67	1.0	0.2	15.0	2.40 *	1.3	3.7 H	12	LB
BUUVV4	12.9	12.9	12.7	13.5	13.0	-0.74	1.1	0.3	13.3	-0.90	1.0	0.5	16	LB
EE7WDR	14.1	15.0	13.9	14.2	14.3	0.82	1.2	0.5	14.3	1.07	1.2	0.4	16	LA
EJZT2W	14.4	13.4	12.8	14.7	13.8	0.25	1.0	0.8	13.5	-0.43	1.0	0.7	16	XX
EVUAQX	13.1	13.0	13.1 H	13.4 H	13.2	-0.55	1.5	0.2	12.8	-1.81	1.6	0.5	16	LB
EYXZYY	15.9 *	13.7	14.9 *	14.4	14.7	1.34	1.4	0.9	14.5	1.42	1.1	0.7	16	LH
FCCKVX	13.6	14.9	14.2	13.5	14.0	0.51	1.2	0.6	14.1	0.74	1.2	0.5	16	LA
GNNEKV	13.4	13.1	13.4	13.4	13.3	-0.32	1.0	0.1	13.3	-0.87	1.1	0.4	16	LA
H742LX	14.5	14.3	14.3	14.5	14.4	0.90	1.4	0.1	13.8	0.20	1.2	0.4	16	LU
HUBKWW	14.2	14.0	13.6	13.4	13.8	0.22	1.0	0.4	13.6	-0.36	1.1	0.5	16	LA
JM3H8L	12.9	11.9 *	No Data	10.2 X	11.7	-2.32 *	1.1	1.4 H	13.4	-0.59	1.3	3.2 H	15	LZ
JVYFUP	No Data	No Data	No Data	13.4	13.4	-0.29	0.8	0.0	13.3	-0.77	0.8	0.1 L	4	LH
K2JVXL	14.1	14.6	13.6	13.5	13.9	0.37	1.1	0.5	13.9	0.34	1.2	0.5	16	LH
LY8F9R	14.0 L	13.7 L	13.8 L	13.7 L	13.8	0.26	0.0	0.2	13.7	-0.06	0.0	0.3	16	LH
MALWCH	13.4	13.0	13.1	13.0	13.1	-0.58	0.9	0.2	13.5	-0.40	1.1	0.4	16	XX
P4BKCM	13.3	13.2	13.5	13.8	13.5	-0.18	1.3	0.3	13.4	-0.65	1.1	0.3	16	TT
P64D6K	11.6 *	11.6 *	11.5 X	11.4 X	11.5	-2.48 *	1.1	0.1	11.8	-3.52 X	1.1	0.5	16	XX
PDEFQL	15.3	15.1	16.4 X	16.1 XL	15.7	2.51 *	1.0	0.6	14.9	2.12 *	1.0	0.9	12	LH
QWQKUP	13.3	13.4	12.1 *	13.0 L	13.0	-0.79	1.0	0.6	13.3	-0.78	1.1	0.7	16	XX
RMV2NF	13.9	13.7 L	13.9 L	13.8	13.8	0.22	0.8	0.1	13.9	0.20	0.8	0.4	16	LA
VGGJMG	13.9	14.2	14.3	13.7	14.0	0.49	1.1	0.3	13.5	-0.50	1.1	0.6	16	TX
XDDDGA	13.2	12.7	14.1	13.9	13.5	-0.16	1.2	0.6	14.0	0.43	1.1	0.6	16	LA
Y4JPYC	16.2 *	15.1	14.6	14.8 *	15.2	1.87	1.0	0.7	14.5	1.47	1.1	0.6	16	XX

Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T826

Report #662
November 2024

Consensus (All Labs) Results

Wk Mean	13.74	13.57	13.62	13.71	Month Mean	13.61	Grand Mean	13.74	
Avg SDr	1.14	1.15	1.14	1.12	Avg SD	1.12	Avg SD	1.12	
SD btwn Labs	0.93	0.89	0.63	0.55	SD btwn Labs	0.84	SD btwn Labs	0.54	
Labs Incld	29	29	26	27	SD btwn Wks	0.52	SD btwn Wks	1.03	
Labs Excld	0	0	2	3	Labs Incld	30	Labs Incld	29	
Labs not Rcvd	1	1	2	0					

Key to Instrument Codes Reported by Participants

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