Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX17	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC15	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC15	Edgewise Compressive Strength by T839, Corrugated Board
205	42H2	Bursting Strength (Mullen), 42 lb Linerboard
207	35E3	Bursting Strength (Mullen), 35 lb Linerboard
215	42H2	Ring Crush, 42 lb Linerboard
217	35E3	Ring Crush, 35 lb Linerboard
223	42H2	STFI, 42 lb Linerboard
225	35E3	STFI, 35 lb Linerboard
228	42H	Roughness - Stylus Method, 42 lb Linerboard
229	42H2	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	CM12	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM12	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM12	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM12	STFI, 26 lb Corrugating Medium

Collaborative Testing Services, Inc.
CONTAINERBOARD INTERLABORATORY TESTING PROGRAM

INTRODUCTION

The Interlaboratory Testing Program for Containerboard is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance provided by the Containerboard Group of the American Forest & Paper Association. The tests are conducted on a monthly basis.

For these tests samples of linerboard and corrugating medium, that each have been separately randomized from narrow rolls, are distributed for testing weekly. One weight of medium (26 lb.) is used for Concora Flat Crush Strength, Corrugated Fluted Crush Strength, Ring Crush Strength, and STFI Compression. Two weights of linerboard are tested each month for Mullen Burst, Ring Crush, and STFI Compression: 42 lb. - every month; 35 lb. and 56 lb. - alternate months. The participants return their test results for analysis and receive a monthly report.

Please refer to the section, "EXPLANATION OF TABLES", for definitions of terms and guidelines to interpreting the results.

<u>USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE</u>

The samples of linerboard and corrugating medium, which have been randomized and placed in sealed packages for distribution in this program, may be used as collaborative reference materials. The values most representative of each material are the Cumulative Grand Means in the latest reports, given at the bottom right of each table. Comparisons can only be made within one lot of material; therefore check your measurements against the Cumulative Grand Means with the same lot code as on the packages being tested.

Material	Lot Code	Dates in Use
26# Corrugating Medium	CM12	July 2021 - Current
	CM11	April 2019 - June 2021
35# Corrugating Medium	35E3	June 2022 - Current
	35E2	June 2020 - April 2022
42# Corrugating Medium	42H2	December 2022 - Current
	42H1	April 2022 - November 2022
56# Corrugating Medium	56G3	July 2022 - 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'.

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 - BX17
TAPPI Official Test Method T804

Report #645
June 2023

	Monthly Results				Cumulative Results				
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**	**Months**	**Inst**
26UBUE	892.0	0.96	61.62		894.6	1.06	46.56	4	LG
2MPVD8	848.9	0.22	78.15		841.2	0.04	66.59	4	ER
2VJZ6N	839.9	0.07	105.65		842.1	0.05	30.92	4	EX
3AU2G6	836.4	0.00	122.05		832.3	-0.13	28.83	4	EX
3Z3TM2	745.5	-1.55	59.88		811.7	-0.53	147.14 H	4	LL
46GM6J	774.7	-1.05	53.27		751.5	-1.69	17.59	4	LL
4ZK42Z	1,024.8	3.23 X	88.31		1,007.4	3.23 X	40.23	3	LS
6G4CJF	805.6	-0.52	116.58		780.5	-1.13	22.94	4	EX
6QCRLG	902.4	1.13	80.88		917.2	1.50	49.57	4	EX
7FUHJA	897.4	1.05	73.93		864.4	0.48	39.49	4	LO
9H87RB	802.2	-0.58	103.00		867.8	0.55	51.31	4	EX
AMZC28	759.3	-1.31	20.14		795.2	-0.85	28.36	4	ET
B9T4GU	879.0	0.73	52.41		933.7	1.81	48.06	3	LN
CVKF7C	628.0	-3.56 X	28.32		744.5	-1.82	81.84	4	LH
EWET42	824.4	-0.20	85.61		805.7	-0.65	46.98	4	LG
FW7FH4	858.8	0.39	95.63		854.5	0.29	47.68	4	ER
HQRA7P	874.1	0.65	27.64		900.1	1.17	34.88	4	ER
J94BKN	807.4	-0.49	34.33		783.8	-1.07	29.99	4	ER
JAFC3G	775.9	-1.03	70.59		804.0	-0.68	39.33	4	TB
JM2R4V	779.6	-0.97	114.76		834.7	-0.09	79.17	4	LS
KE4EJL	772.6	-1.09	56.87		783.3	-1.07	28.69	4	LS
KWRL4Y	910.0	1.26	82.47		874.7	0.68	31.87	3	ES
Q9NF3P	916.8	1.38	56.67		924.8	1.64	48.68	4	LM
QLNGCJ	830.3	-0.10	53.03		853.4	0.27	29.79	4	LM
T7RQPL	752.3	-1.43	29.72		820.1	-0.37	90.80	4	LG
T9ULCV	783.6	-0.90	66.02		838.5	-0.02	44.31	4	LG
VX4YVP	839.7	0.06	125.74		776.9	-1.20	61.55	4	EX
X777JN	907.4	1.22	92.75		909.1	1.34	33.36	4	XX
YKM9PJ	958.8	2.10 *	32.85		860.4	0.40	84.83	4	ER

Consensus (All Labs) Results

Month Mean	836.11		**Grand Mean**	839.30	
Avg SD	78.20		**Avg SD Months**	56.43	
SD btwn Labs	58.49		**SD btwn Labs**	52.10	
Labs Incld	27		**Labs Incld**	28	

Containerboard Interlaboratory Testing Program

Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BX17

TAPPI Official Test Method T804

Report #645
June 2023

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	837.85	50.82	1.74	9
Clip sealing	832.96	64.54	3.16	17
Staple sealing	874.14	0.00	38.03	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	**LH**	L.A.B. Compression Tester Model #10610
LL	Lansmont 76-5K	**LM**	Lansmont 122-15k
LN	Lansmont 152-50k	**LO**	Lansmont 152-30k
LS	Lansmont Squeezer	**TB**	TMI Monitor/Compression Tester, Model 17-70
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 202

Edgewise Compressive Strength, by T811, Corrugated Board - EC15

TAPPI Official Test Method T811

Report #645
June 2023

	Monthly Results				Cumulative Results				
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**	**Months**	**Inst**
26UBUE	43.1	0.46	1.30	L	42.8	0.38	1.05	4	LE
683PU4	46.1	1.28	1.77		41.5	-0.22	3.23	4	XX
6G4CJF	41.7	0.10	1.29	L	43.5	0.69	2.65	4	LC
6QCRLG	42.5	0.31	2.06		43.7	0.76	1.47	4	LC
BYPT7Y	44.9	0.94	3.44		45.4	1.53	1.36	4	XX
FW7FH4	39.8	-0.44	2.19		41.3	-0.31	1.34	3	EN
JM2R4V	38.8	-0.70	3.00		41.3	-0.33	2.06	4	LD
MLJU7F	160.0	32.21 X	5.63 H		158.4	52.27 X	3.57	4	LD
X777JN	44.6	0.88	5.07 H		42.7	0.32	1.31	4	TS
ZF93GQ	34.0	-2.02 *	5.36 H		37.2	-2.16 *	4.56	2	XX
ZK6LNF	38.4	-0.80	1.56		40.5	-0.66	1.46	4	TS

Consensus (All Labs) Results

Month Mean	41.39		**Grand Mean**	42.00
Avg SD	3.05		**Avg SD Months**	2.31
SD btwn Labs	3.68		**SD btwn Labs**	2.23
Labs Incld	10		**Labs Incld**	10

Key to Instrument Codes Reported by Participants

EN	Emerson 2200		**LC**	L&W Crush Tester 48
LD	L&W Crush Tester 248		**LE**	L&W Crush Tester 840
TS	TMI Digital Crush Tester, Model 17-56		**XX**	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Report #645

Analysis 203

June 2023

Edgewise Compressive Strength by T839, Corrugated Board - EC15

TAPPI Official Test Method T839

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
26UBUE	45.0	-0.44	1.36		44.0	-0.81	1.19		4	LY
2MPVD8	49.3	0.78	0.76		45.8	-0.12	3.53	4	LD
2VJZ6N	49.2	0.74	1.47		45.7	-0.14	2.31	4	TL
3AU2G6	46.2	-0.11	1.24		44.4	-0.66	2.50	4	LD
3WRF8M	47.4	0.24	2.08		46.8	0.28	0.96	4	TU
3Z3TM2	45.7	-0.26	0.54	L	46.0	-0.04	1.46	4	BU
4WLMTC	43.7	-0.81	2.51	H	43.8	-0.88	0.74	3	TD
4ZK42Z	55.1	2.43 *	1.20		56.0	3.89 X	0.86	3	EM
683PU4	45.3	-0.35	1.09		41.2	-1.93 *	2.84	4	XX
6G4CJF	46.1	-0.14	1.37		48.5	0.93	1.67	4	LC
6QCRLG	47.3	0.22	1.70		48.1	0.77	1.89	4	LC
72RTN9	35.1	-3.28 X	1.92		35.1	-4.32 X	0.00	1	XX
7FUHJA	42.2	-1.25	2.06		43.8	-0.91	1.26	4	LD
9H87RB	46.7	0.03	2.01		45.4	-0.26	0.96	4	CT
AMZC28	48.8	0.63	1.77		49.5	1.34	2.05	4	TD
CVKF7C	38.6	-2.27 *	1.39		43.0	-1.20	5.96 H	4	EM
FGVM49	44.1	-0.70	1.76		44.0	-0.81	0.57	4	BU
FW7FH4	47.1	0.15	1.90		47.6	0.57	1.30	4	EN
GA7GQY	42.4	-1.19	2.20		42.5	-1.43	0.07	2	TD
HQRA7P	50.5	1.11	1.53		49.1	1.18	1.81	4	LD
J94BKN	46.4	-0.05	1.06		46.2	0.06	0.31 L	4	EM
JAFC3G	46.0	-0.17	0.66	L	51.2	1.98 *	4.73	4	LD
JM2R4V	40.8	-1.64	2.57	H	45.1	-0.37	3.00	4	LD
KB9J6T	48.1	0.43	2.15		49.1	1.16	0.70	4	TG
KE4EJL	43.5	-0.86	1.10		43.1	-1.18	0.97	4	EM
KWRL4Y	46.5	-0.02	1.36		47.9	0.69	1.09	4	LD
NR3C4N	53.0	1.83	2.58	H	43.9	-0.84	9.60 H	4	XX
Q9NF3P	49.9	0.94	1.27		46.4	0.12	2.57	4	EM
QCMXYV	52.8	1.78	1.72		50.2	1.59	2.86	4	LC
QLNGCJ	45.3	-0.36	1.24		46.6	0.20	1.23	4	TG
RXDKB4	49.5	0.84	0.93		48.5	0.93	1.49	4	TH
T7RQPL	51.2	1.31	0.94		50.7	1.82	0.46	3	MK
T9ULCV	45.6	-0.29	1.37		45.8	-0.13	0.39 L	4	EM
VDEPPH	49.2	0.74	1.04		49.0	1.12	0.57	4	EM
X777JN	44.8	-0.52	1.19		44.7	-0.54	1.66	4	TS
YKM9PJ	45.2	-0.39	1.02		45.9	-0.09	0.99	4	LD
ZF93GQ	42.2	-1.25	1.21		43.5	-1.01	1.88	2	XX
ZK6LNF	42.6	-1.14	1.10		42.5	-1.40	1.81	4	TS

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC15
TAPPI Official Test Method T839

Report #645
June 2023

Consensus (All Labs) Results

Month Mean	46.57	**Grand Mean**	46.09
Avg SD	1.56	**Avg SD Months**	2.62
SD btwn Labs	3.51	**SD btwn Labs**	2.55
Labs Incld	37	**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
LC	L&W Crush Tester 48	**LD**	L&W Crush Tester 248
LY	L&W 830	**MK**	Mark-10 ESM303
TD	TMI Digital Crush Tester, Model 17-09	**TG**	TMI Digital Crush Tester, 17-76
TH	TMI Monitor/Compression Tester, Model 17-76	**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 - 42H2
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
26UBUE	121.8	124.6	123.3	126.4 *	124.0	1.84	9.6	2.0	124.0	1.89	9.0	2.9	16	AH
2MPVD8	110.7	104.5 *	113.9	113.2	110.6	-1.07	9.0	4.3	112.5	-0.86	9.4	3.5	16	LZ
2QJULB_AL	104.6 *H	110.2	114.9	104.1 *	108.4	-1.53	11.1	5.1	109.9	-1.46	10.1	4.0	16	AL
2X3XTD	104.8 *	105.4	110.7	106.0	106.7	-1.90	9.4	2.7	109.0	-1.67	11.9	4.6	16	LA
32ZWM4	116.4	115.8	116.2	115.1	115.9	0.08	5.6	0.5	115.8	-0.05	5.6	0.9 L	16	LJ
3AU2G6	117.2	111.6	113.2	116.4	114.6	-0.20	7.1	2.6	115.5	-0.14	8.4	2.7	16	AH
3F3KJ4	129.4 *	135.4 X	126.2 *	135.8 X	131.7	3.51 X	9.1	4.7	123.5	1.77	9.5	8.2 H	16	LB
3Z7BRQ	111.1	110.8	107.9	107.7	109.4	-1.33	8.1	1.8	112.5	-0.84	8.2	3.3	16	LC
47QLM8	123.0	122.4	118.0	121.7	121.3	1.25	10.1	2.2	118.6	0.60	10.1	3.1	16	LA
47QLM8_AL	116.9	119.3	118.6	117.5	118.1	0.55	6.4	1.1	117.5	0.35	7.2	2.6	16	AL
683PU4	115.7	113.7	112.6	113.9	114.0	-0.33	7.0	1.3	114.4	-0.39	6.8	1.6	16	LC
6F9UFT	104.0 *	No Data	No Data	No Data	104.0	-2.49 *	6.2	0.0	109.4	-1.59	7.9	6.3	13	LA
6F9UFT_AL	122.3	No Data	No Data	No Data	122.3	1.47	12.4	0.0	125.8	2.33	*10.4	4.6	13	AL
6G4CJF	108.0	114.9	116.2	117.3	114.1	-0.30	9.0	4.2	114.3	-0.41	8.7	3.8	16	AH
6JQX7B	117.9	118.9	121.6	115.0	118.4	0.61	9.4	2.7	118.5	0.58	8.6	2.6	15	LC
7PFTPU_AL	128.7 *	122.0	120.9	117.2	122.2	1.44	9.4	4.8	120.9	1.16	10.8	4.5	15	AL
9H87RB	111.5	117.0	116.5 H	121.5	116.6	0.24	10.7	4.1	117.6	0.36	10.3	2.9	16	XX
9UMVT2	117.2	121.2	117.9	126.3 *H	120.7	1.12	10.9	4.2	120.5	1.06	9.8	2.7	16	LJ
9VEU3U	120.0	118.4	119.4	112.6	117.6	0.45	10.9	3.4	113.9	-0.50	9.2	4.6	16	RE
ANBEN7	115.0	116.1	115.8	115.6	115.6	0.03	6.4	0.5 L	116.1	0.02	6.0	0.6 L	16	LA
BFDX27	115.4	108.6	108.0	112.1	111.0	-0.97	9.9	3.4	111.5	-1.09	10.0	2.7	16	LC
BQVNDX	123.2 L	123.5 L	123.7 L	123.5 L	123.5	1.72	2.8	0.2 L	125.2	2.17	* 3.0	1.1	16	AH
BWKZEK	110.0	110.4	111.3	112.9	111.1	-0.95	5.8	1.3	110.8	-1.25	6.2	1.4	10	XX
CZCMMY_AI	115.0	113.7 L	116.0	114.7	114.9	-0.14	7.3	0.9	116.9	0.21	7.6	2.4	16	AL
DC4TYU	115.3	120.0	120.6	113.2	117.3	0.39	11.1	3.6	120.4	1.04	10.7	4.0	16	LC
DH9K9R	115.6	108.9	105.6 *	115.0	111.3	-0.92	8.3	4.8	111.4	-1.11	7.8	2.8	16	ME
FXXGEF_AL	126.5 H	128.4 *H	136.9 XH	131.3 XH	130.8	3.30 X	19.7	4.5	132.8	4.00	X20.4	4.9	12	AL
GB4MBY	118.6	116.8	118.6	121.4	118.9	0.72	5.1	1.9	119.1	0.73	5.5	1.7	7	AH
GTJ4AL_AL	107.0	110.3	111.4 L	104.5 *	108.3	-1.56	6.3	3.2	109.4	-1.59	6.5	2.5	16	XX
H2RVEA_AL	116.4	117.8	113.4	118.7	116.6	0.23	8.0	2.3	115.3	-0.19	8.7	3.9	16	AL
HV4DYD	120.2	116.8	120.7	117.9	118.9	0.73	9.8	1.9	117.0	0.24	8.3	5.4	14	TB
J3JB7W	116.7 L	118.6 L	119.8 L	118.6 L	118.4	0.63	1.8	1.3	115.7	-0.08	2.2	2.2	16	LA
JAFC3G	111.2	104.7 *	107.2	106.7	107.4	-1.74	6.2	2.7	110.6	-1.31	7.2	3.9	16	XX
JM2R4V	119.4	112.7	117.5	112.3	115.5	0.00	7.7	3.5	116.0	-0.02	9.3	2.5	16	LA
JPTL8Q_AL	122.3	119.8	119.8	113.7	118.9	0.74	10.7	3.7	117.9	0.43	9.4	3.8	15	AL

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42H2
TAPPI Official Test Method T807

Report #645
June 2023

| | 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
K93ZZ7	116.3	110.9	108.5	113.6	112.3	-0.69	8.5	3.4	113.6	-0.59	8.4	3.5	16	XX
KWRL4Y	111.1	110.8	121.5	106.7	112.5	-0.65	9.3	6.3 H	113.4	-0.62	9.5	4.6	16	LA
LEQVMV_AL	121.8	119.7 L	116.7 L	116.7 L	118.7	0.70	3.0	2.5	116.6	0.14	2.8	4.3	12	XX
LQYPTE	116.8	114.2	121.4	114.0	116.6	0.24	9.9	3.5	120.8	1.13	9.8	4.3	12	LC
LQYPTE_AL	124.0	122.1	121.0	124.5	122.9	1.59	10.2	1.6	122.0	1.42	10.6	2.4	12	AL
LRV74P	114.7	113.5	115.0	113.6	114.2	-0.28	5.4	0.8	115.6	-0.10	6.5	5.4	16	AX
M36BHP	120.7	114.7	115.6	114.0 L	116.3	0.17	8.3	3.1	118.9	0.69	8.5	3.4	16	LA
MLJU7F	102.3 *	106.7	100.9 X	107.6	104.4	-2.41 *	9.9	3.3	104.9	-2.66 *	8.8	3.0	16	LA
QJKVF7	118.5	116.5	115.0 L	116.6	116.7	0.25	6.7	1.4	116.6	0.13	6.3	0.8 L	16	AH
QQ3YTZ	114.5	118.8	113.1	118.2	116.1	0.13	10.1	2.8	114.6	-0.34	9.2	3.0	16	LA
R3BY6K_AL	112.8	116.4	111.5	115.3	114.0	-0.33	9.6	2.2	117.5	0.33	9.0	3.6	16	AL
RL2APY_AL	118.8	117.7	118.7	113.7	117.2	0.37	9.0	2.4	116.2	0.03	9.4	2.1	16	AL
U4UYR7	115.2	114.6	113.1	116.0	114.7	-0.17	5.8	1.2	115.4	-0.15	6.0	1.2	16	TP
U6T3LG_AL	118.8	No Data	112.4	No Data	115.6	0.02	7.2	4.5	116.8	0.18	8.5	3.1	10	AL
V8BJG7	115.8	118.0	No Data	118.4	117.4	0.41	4.8	1.4	115.9	-0.04	5.4	2.2	6	AX
V8BJG7_AL	119.6	113.5	No Data	116.5	116.5	0.22	7.1	3.1	116.8	0.19	8.0	2.0	6	AL
VGJDBY_AL	116.4	107.9	112.8 H	117.6	113.7	-0.40	11.9	4.4	115.1	-0.22	10.2	3.4	16	AL
VREFWF_AL	118.0 L	118.4	120.7	120.5	119.4	0.85	6.9	1.4	120.4	1.04	7.1	2.6	16	AL
XKB23Q_AL	108.0	112.3	108.4	115.7	111.1	-0.95	7.3	3.6	110.6	-1.29	6.2	2.8	16	AL
YKM9PJ	119.5	120.9	115.2	114.0	117.4	0.41	9.5	3.3	114.7	-0.32	9.1	2.8	16	AH
Z4VT2D	113.4	116.9 H	120.6	122.6	118.4	0.62	10.3	4.1	116.9	0.20	8.9	3.5	16	LZ
ZUVZ4T	121.8	115.0	124.1	121.3	120.6	1.09	7.0	3.9	118.1	0.48	6.8	3.5	16	LA

Consensus (All Labs) Results

Wk Mean	116.28	115.42	116.13	115.57	**Month Mean**	115.51	**Grand Mean**	116.06
Avg SDr	8.65	8.54	8.79	8.33	**Avg SD**	8.45	**Avg SD**	8.38
SD btwn	5.82	5.22	4.85	5.15	**SD btwn Labs**	4.62	**SD btwn Labs**	4.19
Labs Incld	57	53	51	52	**SD btwn Wks**	3.07	**SD btwn Wks**	3.46
Labs Excld	0	1	2	2	**Labs Incld**	55	**Labs Incld**	56
Labs not	0	3	4	3				

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42H2
TAPPI Official Test Method T807

Report #645
June 2023

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	**RE** Regmed/Mullen Tester
TB TMI Monitor/Burst 1000	**TP** Technidyne PROFILE/Plus
XX Instrument make/model not specified by lab	

Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 35 lb Linerboard - 35E3
TAPPI Official Test Method T807

Report #645
June 2023

	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
26UBUE	97.5	97.9	97.3	101.6 *	98.6	2.22 *	9.0	2.0	97.4	2.02 *	7.9	2.5	12	AH
2MPVD8	85.7	83.3 *	83.2 *H	89.9	85.5	-2.05 *	8.7	3.1	86.6	-1.77	8.2	2.7	12	LA
2QJULB_AL	12.9 XL	11.5 XL	12.4 XL	11.6 XL	12.1	-26.04 X	1.1	0.7	36.7	-19.32 X	4.9	36.3 H	12	AL
2X3XTD	82.6 *	81.6 *	90.0	91.4	86.4	-1.76	8.0	5.0	85.8	-2.06 *	7.7	2.9	12	LA
32ZWM4	92.9	91.2	91.8	91.1	91.8	-0.01	4.6	0.8	91.9	0.07	5.2	0.6 L	12	LJ
3AU2G6	90.8	86.0	91.2	90.0	89.5	-0.74	7.9	2.4	92.4	0.25	7.7	3.4	12	AH
3F3KJ4	98.8	97.7	92.9	90.1	94.9	1.01	9.1	4.1	95.1	1.21	9.4	3.9	12	LB
3Z7BRQ	89.4	89.1	86.8	84.8	87.5	-1.39	8.5	2.2	87.9	-1.34	7.0	2.8	12	LA
47QLM8	96.9	100.9 *	90.7	94.9	95.8	1.32	8.1	4.2	96.7	1.76	7.9	2.9	12	LA
47QLM8_AL	91.1	93.8	96.0	94.7	93.9	0.70	4.4	2.1	93.0	0.45	5.1	2.3	12	AL
6F9UFT	87.4	No Data	No Data	No Data	87.4	-1.43	6.9	0.0	88.1	-1.28	6.8	2.8	9	AH
6F9UFT_AL	90.2	No Data	No Data	No Data	90.2	-0.51	9.5	0.0	90.3	-0.50	10.0	1.7	9	AL
6G4CJF	95.0	89.6	93.8	95.7	93.5	0.58	8.3	2.7	87.8	-1.36	8.5	5.7	12	AH
6JQX7B	88.6	91.2	91.7	91.6	90.8	-0.33	6.9	1.5	91.7	0.00	7.6	2.4	12	LC
7PFTPU_AL	96.2	90.8	92.7	94.9	93.6	0.61	4.1	2.4	96.8	1.78	6.4	3.6	11	XX
9H87RB	94.5	93.0 H	94.0 H	99.0	95.1	1.10	11.3	2.7	92.6	0.33	9.0	2.8	12	XX
9UMVT2	90.3	85.5 H	95.4	91.0	90.6	-0.39	10.7	4.1	91.4	-0.11	9.6	3.8	12	LJ
9VEU3U	97.2	99.6	101.8 *	95.8	98.6	2.23 *	8.5	2.6	88.9	-0.97	7.1	8.3 H	12	RE
ANBEN7	90.2 L	91.2 L	90.4	91.2 L	90.8	-0.33	3.0	0.5	91.1	-0.19	2.8	0.5 L	12	LA
BFDX27	94.7	92.9	93.6	90.6	92.9	0.37	5.8	1.7	89.8	-0.65	7.2	3.2	12	LC
BQVNDX	101.7 *L	102.5 *L	102.2 *L	101.7 *L	102.0	3.35 X	2.4	0.4 L	100.2	2.98 X	3.1	2.9	12	AH
BWKZEK	83.1 *	89.4	93.6	92.4	89.6	-0.71	6.7	4.7	90.2	-0.54	6.0	3.0	11	XX
CZCMMY_AI	90.0	91.8	88.7 L	94.1	91.1	-0.20	5.7	2.3	92.9	0.41	6.2	2.4	12	AL
DC4TYU	91.4	93.5	92.0	99.3	94.1	0.74	9.7	3.6	93.9	0.77	8.4	2.4	12	LC
DH9K9R	90.1	92.3	89.4	96.3	92.0	0.09	7.0	3.1	92.1	0.16	7.4	2.7	12	ME
GB4MBY	97.8	99.4	96.4	94.6	97.1	1.73	5.8	2.0	96.1	1.55	5.2	3.3	6	AH
GTJ4AL_AL	91.0	87.9	88.5	86.1	88.4	-1.11	4.5	2.0	87.9	-1.35	5.0	2.0	12	XX
H2RVEA_AL	89.3	88.7	91.7	91.4	90.3	-0.49	8.7	1.5	90.7	-0.37	9.2	2.6	12	AL
HV4DYD	98.6	90.6	94.9	92.2	94.1	0.76	8.2	3.5	96.8	1.81	8.4	8.9 H	11	TB
J3JB7W	92.0 L	91.0 L	92.8 L	92.6 L	92.1	0.11	1.5	0.8	91.8	0.03	1.9	1.1	12	LA
JAFC3G	88.3	89.6	85.0	85.9 L	87.2	-1.50	7.5	2.1	87.4	-1.50	7.8	2.7	12	XX
JM2R4V	89.7	86.9	87.0	86.1	87.4	-1.42	7.0	1.6	89.4	-0.82	8.0	2.6	12	LA
JPTL8Q_AL	87.5	87.6	92.3	90.4	89.5	-0.76	7.6	2.3	90.2	-0.53	7.8	3.0	12	AL
K93ZZ7	90.2	89.3	83.7	92.3	88.9	-0.94	9.2	3.7	88.8	-1.01	8.5	3.4	12	XX
KWRL4Y	92.3	91.6	84.0	86.8	88.7	-1.01	8.7	4.0	88.6	-1.09	9.0	3.1	12	LA

Bursting Strength (Mullen), 35 lb Linerboard - 35E3

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
LEQVMV_AL	91.4 L	93.6 L	92.3 L	90.9 L	92.0	0.08	1.1	1.2	91.7	-0.01	2.1	1.0	8	XX
LQYPTE	98.5	89.8	94.4	91.6	93.6	0.58	7.2	3.8	95.3	1.27	7.5	2.8	12	LC
LQYPTE_AL	96.1	90.3	98.0	92.1	94.1	0.76	9.1	3.5	94.9	1.13	7.9	3.0	8	XX
LRV74P	109.4 X	107.4 X	104.9 X	96.1 H	104.5	4.14 X	10.3	5.9 H	101.6	3.47 X	9.5	6.6 H	12	AX
M36BHP	89.8	91.0	89.8	90.2	90.2	-0.52	7.8	0.5	91.3	-0.15	7.3	2.7	12	LA
MLJU7F	80.2 X	76.2 X	81.9 *	85.6	81.0	-3.52 X	7.3	3.9	82.5	-3.22 X	6.6	2.9	12	LA
QJKVF7	92.7	90.4	91.0	92.2	91.6	-0.06	6.4	1.1	91.0	-0.26	6.3	1.0	12	AH
QQ3YTZ	89.3	88.0	88.4	91.1	89.2	-0.84	9.3	1.4	89.4	-0.81	7.9	2.1	12	LA
R3BY6K_AL	92.2	97.9	96.9	89.6 H	94.2	0.78	11.4	3.9	92.2	0.16	9.2	3.6	12	AL
RL2APY_AL	92.8	88.9	90.7	91.6	91.0	-0.26	6.7	1.7	91.5	-0.08	8.2	2.3	12	AL
U4UYR7	91.9	90.9	89.8	90.8	90.9	-0.30	5.6	0.9	91.3	-0.15	6.0	0.9	12	TP
U6T3LG_AL	92.2	No Data	92.6	No Data	92.4	0.19	4.9	0.3	91.2	-0.17	8.5	3.4	9	AL
V8BJG7	96.4	93.4	No Data	89.6	93.1	0.45	5.5	3.4	93.1	0.51	6.7	2.4	6	AX
V8BJG7_AL	93.1	89.7	No Data	89.7	90.8	-0.31	7.0	2.0	91.3	-0.14	6.8	1.6	6	AL
VGJDBY_AL	92.5	96.5	90.5	88.9	92.1	0.11	8.1	3.3	93.2	0.53	8.2	2.6	12	AK
VREFWF_AL	93.4	94.5	94.9	97.7	95.1	1.09	5.0	1.8	95.3	1.28	5.8	1.4	12	AL
XKB23Q_AL	88.0	88.9	87.8	85.7	87.6	-1.37	6.0	1.4	89.0	-0.94	6.0	1.6	12	AL
YKM9PJ	95.7	97.1	94.3	94.3	95.4	1.17	8.0	1.3	94.3	0.91	8.2	2.8	12	AH
Z4VT2D	98.2	90.8	93.8	94.6	94.3	0.84	8.4	3.0	93.1	0.51	8.2	3.1	12	LZ
ZUVZ4T	91.4	94.3	97.1	98.2	95.3	1.14	5.1	3.0	95.2	1.24	5.6	4.5	12	LA

Consensus (All Labs) Results

Wk Mean	92.28	91.70	91.83	92.17	Month Mean	91.77	Grand Mean		91.69
Avg SDr	7.23	7.56	7.09	7.85	Avg SD	7.46	Avg SD		7.39
SD btwn	4.00	4.33	4.34	3.97	SD btwn Labs	3.06	SD btwn Labs		2.85
Labs Incld	52	49	49	51	SD btwn Wks	2.69	SD btwn Wks		3.22
Labs Excld	3	3	2	1	Labs Incld	51	Labs Incld		51
Labs not	0	3	4	3					

Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 35 lb Linerboard - 35E3
TAPPI Official Test Method T807

Report #645
June 2023

Key to Instrument Codes Reported by Participants

AH	Perkins Model AH	**AK**	L & W Autoline 300
AL	L & W Autoline 400	**AX**	Perkins Mullen Tester (model not specified)
LA	L&W Bursting Strength Tester	**LB**	L&W Burst-O-Matic
LC	L&W Autoline (207 Enrollment)	**LJ**	L&W Bursting Strength Tester J-Type
LZ	L&W (model not specified)	**ME**	Messmer Automatic Burst Tester ME-06
RE	Regmed/Mullen Tester	**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 - 42H2
TAPPI Official Test Method T822

WebCode	Week 1		Week 2		Week 3		Week 4		Mean	CPV		SD	SD Wks		Mean	CPV		SD	SD Wks		Wks	Inst
26UBUE	96.0		97.2	L	94.1		95.0		95.6	-0.12		2.2	1.3		94.1	-0.42		2.3	1.4		16	LG
2MPVD8	93.8	L	95.1		89.5		94.4		93.2	-0.91		3.1	2.5		93.8	-0.51		2.9	1.9		16	LD
32ZWM4	94.1		95.8	L	96.3		94.2		95.1	-0.27		2.8	1.1		95.9	0.11		2.3	0.8	L	16	LD
3F3KJ4	101.7		85.5	*H	93.5		91.0		92.9	-0.99		5.1	6.8	H	94.8	-0.22		4.0	4.6		16	LD
3Z7BRQ	94.5		96.7	L	92.7		94.3		94.6	-0.45		2.6	1.6		94.8	-0.21		2.6	1.4		16	LD
47QLM8	97.3		96.1		92.1		100.6		96.5	0.21		3.9	3.5		95.9	0.10		3.4	2.2		16	LD
6G4CJF	No Data		No Data		No Data		96.9		96.9	0.31		2.1	0.0		97.1	0.45		2.8	1.3		13	LC
6JQX7B	98.6		97.0		98.9		98.1		98.2	0.75		2.7	0.8		99.5	1.16		4.4	1.8		16	MB
6ZDBK4	96.2	L	95.2	L	94.0	L	94.6	L	95.0	-0.31		0.6	0.9		94.7	-0.24		0.9	1.2		16	TH
7NMQ6Z	97.1		106.6	*	105.5	X	105.5	X	103.7	2.57	*	3.5	4.4		97.3	0.52		7.0	9.7	H	16	TU
7PFTPU	98.7	L	97.9		97.6		99.9		98.5	0.86		2.4	1.0		96.7	0.35		3.9	5.6		16	LZ
9VEU3U	88.3	H	86.0	H	77.8	XH	83.5	XH	83.9	-3.97	X	10.5	4.5		84.7	-3.17	X	10.4	2.7		16	EM
BFDX27	97.1		96.0		93.6		94.8		95.4	-0.18		3.8	1.5		97.3	0.52		3.9	2.3		16	LD
BQVNDX	97.3		97.2		97.0		98.0		97.4	0.49		2.7	0.4		96.5	0.28		2.5	0.7	L	16	LD
BWKZEK	86.3	*	94.3		92.5		93.5		91.6	-1.42		4.8	3.6		93.4	-0.63		5.7	10.5	H	10	TU
DC4TYU	97.5	L	92.9		92.6		94.6		94.4	-0.50		2.5	2.3		96.2	0.19		3.1	3.1		16	LD
DH9K9R	101.7		100.2		103.6	*	95.3		100.2	1.43		3.0	3.6		101.5	1.74		4.0	2.3		16	LX
FL2FX6	95.7		96.4		97.1		98.2		96.8	0.31		3.6	1.1		96.9	0.41		4.0	1.4		12	RS
FTMBWM	82.8	XL	84.3	*L	84.2	XL	84.6	XL	84.0	-3.95	X	0.7	0.8		75.9	-5.76	X	19.2	16.4	H	16	LZ
FW7FH4	93.7		90.5	L	92.9		91.8		92.2	-1.22		3.0	1.4		92.8	-0.81		2.9	1.7		16	EN
FXXGEF	71.2	XH	68.2	XH	94.9		94.8		82.3	-4.51	X	6.0	14.6	H	86.6	-2.62	*	5.7	11.4	H	12	LC
GA7GQY	94.4	L	94.3	L	94.6	L	94.4	L	94.4	-0.50		1.5	0.1	L	94.4	-0.32		1.6	0.3	L	12	MB
GRBN62	99.2		99.9	L	97.7		97.9		98.7	0.91		2.9	1.1		100.2	1.35		4.3	4.1		16	MB
GTJ4AL	97.8		96.3		97.0	L	97.1		97.1	0.39		2.7	0.6		97.2	0.48		2.6	0.9	L	16	LD
GY7UY3	86.8	*	82.9	*	83.1	X	87.9	*	85.2	-3.56	X	4.1	2.6		88.8	-1.97	*	3.8	4.7		12	EM
H2RVEA	101.3	L	102.7		100.5		98.0		100.6	1.56		2.8	2.0		98.3	0.79		2.5	1.9		16	LD
HMU2N2	96.0		97.7		92.3		104.0	X	97.5	0.53		3.9	4.9	H	95.0	-0.15		3.8	3.8		16	LD
HV4DYD	96.6		97.0		97.8		92.3		95.9	0.01		3.7	2.5		101.2	1.66		3.7	4.7		13	LD
J3JB7W	95.7	L	95.6	L	95.4	L	95.4	L	95.5	-0.13		0.3	0.1	L	98.2	0.77		1.1	2.8		16	TU
JM2R4V	96.1		97.1	L	96.6	L	97.8		96.9	0.33		2.6	0.7		96.7	0.32		2.6	1.0	L	16	LD
KB9J6T	98.6		92.0		95.5		92.5		94.7	-0.42		2.8	3.1		97.7	0.64		2.7	3.9		16	TH
LQYPTE	91.0		96.6		88.3	*	91.9		92.0	-1.31		3.3	3.5		89.3	-1.82		3.2	7.1		12	LD
LRV74P	95.3		93.5		94.0		91.7		93.6	-0.75		2.9	1.5		92.2	-0.97		3.3	1.7		16	LD
M36BHP	98.7		98.9	L	97.0		96.8		97.8	0.64		3.4	1.1		96.7	0.34		3.3	1.3		15	LD
MB3R6N	95.7	L	95.1	L	93.7	L	94.6	L	94.8	-0.38		0.5	0.8		94.5	-0.32		1.2	1.2		16	TH

Ring Crush, 42 lb Linerboard - 42H2

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
MLJU7F	99.8 H	100.6 H	100.5 H	94.7 H	98.9	0.99	20.9	2.8	119.8	7.12	X 15.9	22.7 H	16	LB
NUQN3U	101.4	102.4	102.3 *	100.1	101.6	1.87	4.8	1.1	99.2	1.06	4.4	3.5	16	LD
QCMXYV	91.7	92.5	93.5 L	93.4	92.8	-1.04	2.7	0.8	90.0	-1.62	2.8	3.4	16	LC
RL2APY	66.9 XH	70.7 XH	68.2 X	69.9 X	68.9	-8.93 X	7.9	1.7	69.2	-7.73	X 6.8	2.6	16	LD
U4UYR7	95.3	95.5 L	97.9	94.6	95.8	-0.03	2.8	1.4	95.8	0.08	3.1	1.1 L	16	XX
U6T3LG	99.4	98.2	95.7	96.7	97.5	0.53	4.9	1.6	97.6	0.59	4.7	1.8	16	LC
VDEPPH	92.9 L	92.2	93.1	93.9	93.0	-0.96	2.3	0.7	96.0	0.14	2.9	2.5	16	EM
VGJDBY	91.3	92.9	94.0	92.9	92.8	-1.04	3.9	1.1	92.9	-0.77	3.5	1.7	16	LD
XXZY7A	100.5 L	99.6 L	100.7	101.2 *L	100.5	1.52	1.9	0.7	101.8	1.82	2.2	3.3	16	LD
YKM9PJ	95.4	96.7	94.5 L	95.5	95.5	-0.13	2.3	0.9	97.0	0.44	2.9	2.0	16	LD
Z4VT2D	85.4 *	83.3 *	90.1	92.6	87.9	-2.67 *	3.9	4.3	88.5	-2.08	* 3.2	6.5	16	LC
ZUVZ4T	92.4	93.5 L	94.0	97.8 L	94.4	-0.49	2.3	2.3	93.5	-0.60	3.2	2.2	16	LC

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly			Grand
Wk Mean	95.68	95.17	95.36	95.27	**Month Mean**	95.91		**Grand Mean**	95.56
Avg SDr	4.44	4.94	4.36	4.62	**Avg SD**	4.46		**Avg SD**	3.48
SD btwn	4.01	4.96	3.31	2.81	**SD btwn Labs**	3.02		**SD btwn Labs**	3.41
Labs Incld	43	44	41	42	**SD btwn Wks**	2.38		**SD btwn Wks**	4.01
Labs Excld	3	2	5	5	**Labs Incld**	42		**Labs Incld**	43
Labs not	1	1	1	0					

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	**EN**	Emerson 2200
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	**RS**	Regmed Digital Crush Tester CT-2000
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 217
Ring Crush, 35 lb Linerboard - 35E3
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
26UBUE	79.1	83.3	82.7	81.2	81.6	0.21	3.2	1.8	81.8	0.00	3.1	1.0 L	12	LG
2MPVD8	80.7	81.2	79.4	79.8	80.3	-0.06	3.7	0.8	80.8	-0.37	4.0	1.5	12	LD
32ZWM4	81.4 L	82.9	83.2	82.4	82.5	0.40	2.4	0.8	82.4	0.25	3.1	0.6 L	12	LD
3F3KJ4	86.5	74.0	79.8	77.5	79.4	-0.24	3.2	5.2	80.5	-0.49	3.4	5.1	12	LC
3Z7BRQ	80.6	83.1	83.5	81.6	82.2	0.34	2.9	1.3	84.1	0.94	3.5	2.0	12	LD
47QLM8	79.5	79.7	78.7	85.9	81.0	0.08	4.2	3.3	80.9	-0.37	3.5	2.3	8	LD
6G4CJF	No Data	No Data	No Data	82.5	82.5	0.40	3.1	0.0	84.0	0.91	3.5	0.8 L	9	LC
6JQX7B	85.2	85.9	86.5	85.4	85.8	1.08	3.2	0.6	84.5	1.09	4.3	2.4	12	MB
6ZDBK4	84.1 L	84.5 L	83.6 L	83.8 L	84.0	0.72	0.6	0.4 L	82.9	0.46	1.1	1.2	12	XX
7NMQ6Z	92.2 *	87.5	94.9 X	92.3 *	91.7	2.33 *	5.2	3.1	84.3	1.02	8.2	10.4 H	12	TU
7PFTPU	90.7 H	86.4	85.1	87.2	87.4	1.42	5.2	2.4	86.0	1.70	4.5	2.1	12	LZ
9VEU3U	71.6 H	71.6 *H	71.3 *H	69.3 *H	70.9	-2.01 *	9.8	1.1	72.1	-3.87	X 8.7	5.0	12	EM
BFDX27	87.0	86.5	86.1	83.8	85.9	1.10	4.6	1.4	83.5	0.70	4.7	2.7	12	LD
BQVNDX	76.8	75.9	75.8 L	75.9 L	76.1	-0.94	2.2	0.5 L	77.0	-1.91	2.3	0.8 L	12	LD
BWKZEK	74.2	82.0	75.2	67.5 *H	74.7	-1.23	7.7	5.9 H	80.6	-0.48	5.6	5.9	11	TU
DC4TYU	82.0	82.2	85.4	78.0	81.9	0.27	3.6	3.0	82.5	0.31	3.2	2.0	12	LD
DH9K9R	92.5 *	91.2 *	79.2	84.5	86.9	1.31	4.8	6.2 H	85.1	1.35	5.0	5.4	12	LX
FL2FX6	80.8	81.6	81.0	81.2	81.2	0.12	4.6	0.3 L	81.7	-0.03	4.1	3.7	12	RS
FTMBWM	70.9 *L	70.3 *L	71.2 *L	71.4 L	71.0	-2.01 *	1.0	0.5 L	59.3	-9.00	X 25.6	12.5 H	8	LZ
FW7FH4	80.3	79.0	79.7 L	78.8	79.4	-0.24	3.4	0.7	79.9	-0.73	3.4	1.4	12	EN
FXXGEF	61.2 XH	60.3 X	79.5	79.5	70.1	-2.19 *	6.9	10.8 H	68.7	-5.24	X 7.6	8.8 H	8	LC
GA7GQY	80.8 L	80.0 L	80.3 L	80.8 L	80.5	-0.02	1.8	0.4 L	80.6	-0.49	1.8	0.7 L	12	MB
GRBN62	83.6	85.7	84.7	86.5	85.1	0.95	4.7	1.2	84.7	1.18	5.8	7.1	12	MB
GTJ4AL	81.9	83.2	81.1 L	84.3	82.6	0.43	2.3	1.4	82.9	0.43	2.9	1.2	12	LD
GY7UY3	72.7	69.9 *	73.0	73.7	72.3	-1.73	4.7	1.7	71.8	-4.00	X 4.6	3.9	12	EM
H2RVEA	82.2 L	85.9 L	84.3	84.5 L	84.2	0.76	1.9	1.5	82.7	0.39	2.4	1.9	12	LD
HMU2N2	84.1	81.4 L	77.4	87.6	82.6	0.42	3.3	4.3	80.1	-0.65	2.9	3.3	12	LD
HV4DYD	82.5	81.1	81.2	77.9	80.7	0.02	5.1	1.9	84.3	1.02	5.4	4.0	10	LC
J3JB7W	80.5 L	80.0 L	80.5 L	80.3 L	80.4	-0.05	0.5	0.2 L	82.7	0.37	0.7	2.0	12	TU
JM2R4V	83.1	82.2	80.8	82.3	82.1	0.31	4.2	1.0	80.7	-0.43	3.2	1.3	12	LD
KB9J6T	80.9	83.5	82.0	81.7 L	82.0	0.30	3.6	1.1	82.9	0.45	3.0	1.2	12	TH
LQYPTE	75.2	80.4	74.0	76.8	76.6	-0.83	4.2	2.8	78.4	-1.35	3.8	3.3	12	LD
LRV74P	82.3	81.2	80.7	82.5	81.7	0.23	4.0	0.9	80.7	-0.44	4.4	1.8	12	LD
M36BHP	84.5	83.3	82.1	78.3	82.1	0.31	3.9	2.7	82.6	0.35	3.8	2.0	8	LZ
MB3R6N	83.0 L	84.4 L	83.2 L	83.8 L	83.6	0.64	0.6	0.6	82.7	0.36	1.2	1.5	12	TH

Containerboard Interlaboratory Testing Program
Analysis 217
Ring Crush, 35 lb Linerboard - 35E3
TAPPI Official Test Method T822

Report #645
June 2023

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
MLJU7F	69.8 *H	70.8 *H	73.7 H	74.0 H	72.1	-1.78	15.1	2.1	81.2	-0.24	12.2	14.9 H	12	LB
NUQN3U	78.7	77.7	77.9	75.1	77.4	-0.68	4.8	1.6	76.3	-2.19	* 4.3	1.9	12	LD
QCMXYV	78.6	80.6	80.4	79.3	79.7	-0.18	3.6	0.9	77.6	-1.67	4.8	2.8	12	LC
RL2APY	57.5 XH	58.4 XH	58.0 X	59.2 X	58.3	-4.67 X	7.9	0.7	59.2	-9.06 X	7.7	1.3	12	LD
U4UYR7	78.8	80.8	84.4	80.8	81.2	0.13	3.3	2.3	80.9	-0.34	3.6	1.4	12	TH
U6T3LG	82.6	83.6	83.7	83.0	83.2	0.55	5.5	0.5	82.6	0.31	5.9	1.5	12	LC
VDEPPH	82.7	80.3	80.1	81.2	81.0	0.10	3.4	1.2	82.3	0.20	3.3	1.3	12	EM
VGJDBY	79.1	80.2	79.7	77.7	79.2	-0.30	3.9	1.1	79.4	-0.93	3.8	1.5	12	LD
XXZY7A	92.4 *	87.3	88.4	88.8	89.2	1.81	2.9	2.2	87.6	2.35 *	3.0	3.2	12	LD
YKM9PJ	81.1	81.0	82.2	82.8	81.8	0.25	3.3	0.9	82.8	0.40	3.1	1.0 L	12	LD
Z4VT2D	76.3	76.6	69.6 *	71.0 L	73.4	-1.50	2.8	3.6	77.1	-1.89	3.2	4.0	12	LC
ZUVZ4T	75.7	73.8	77.4	76.3	75.8	-1.00	4.0	1.5	78.0	-1.52	3.9	3.4	12	LC

Consensus (All Labs) Results

Wk Mean	81.12	80.99	80.22	80.44	**Month Mean**	80.58	**Grand Mean**		81.77
Avg SDr	4.55	4.52	4.55	4.67	**Avg SD**	4.63	**Avg SD**		4.31
SD btwn	5.25	4.76	4.31	5.12	**SD btwn Labs**	4.78	**SD btwn Labs**		2.50
Labs Incld	44	44	44	46	**SD btwn Wks**	2.79	**SD btwn Wks**		3.91
Labs Excld	2	2	2	1	**Labs Incld**	46	**Labs Incld**		42
Labs not	1	1	1	0					

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	**EN**	Emerson 2200
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	**RS**	Regmed Digital Crush Tester CT-2000
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 223
STFI, 42 lb Linerboard - 42H2
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
26UBUE	24.4	24.1	24.5	24.9	24.5	0.77	2.0	0.3	24.4	0.57	1.8	0.4	16	BK
29RPHR	22.9	22.3	23.1	22.3	22.7	-1.11	1.6	0.4	23.1	-0.48	1.6	0.7	16	LW
2MPVD8	23.6	23.4	22.6	22.9	23.1	-0.63	2.0	0.4	22.8	-0.75	1.9	0.5	16	LY
2QJULB_AL	25.4	26.1 *	23.6	23.6	24.7	0.99	1.9	1.3	24.7	0.86	2.1	1.1	16	AL
2X3XTD	23.6	24.6	24.0	23.5	23.9	0.18	1.9	0.5	24.3	0.51	2.1	0.6	16	LH
3F3KJ4	22.8	23.5	22.8	20.5 *	22.4	-1.38	1.8	1.3	23.1	-0.50	1.7	0.9	16	LU
3Z7BRQ	22.9	23.8	23.5	24.4	23.7	-0.08	1.6	0.6	23.7	0.05	1.7	1.1	16	LA
47QLM8_AL	24.2	24.1	23.1 L	23.8	23.8	0.08	1.7	0.5	23.7	0.03	1.8	0.6	16	AL
683PU4	25.4	24.1 L	22.1 H	22.3 H	23.5	-0.25	2.0	1.6 H	23.4	-0.20	2.1	1.1	16	LA
6F9UFT	23.4	No Data	No Data	No Data	23.4	-0.35	1.9	0.0	21.1	-2.20 *	1.9	2.7 H	13	LH
6F9UFT_AL	23.9	No Data	No Data	No Data	23.9	0.18	1.8	0.0	21.3	-1.99 *	1.6	1.7	13	AL
6G4CJF	No Data	No Data	No Data	22.8	22.8	-0.92	1.3	0.0	23.4	-0.22	1.6	0.4	13	LU
6JQX7B	23.2 L	24.7 L	23.4 L	23.1 L	23.6	-0.13	0.8	0.7	24.1	0.36	1.5	0.9	16	LA
6ZDBK4	24.2 L	25.4 L	25.1 L	24.3 L	24.8	1.07	0.4	0.6	24.3	0.53	0.5	0.9	16	LZ
7FUHJA	24.8	24.6	23.8 L	25.2	24.6	0.89	1.4	0.6	24.6	0.78	2.0	0.9	16	LH
7NMQ6Z	26.2 *	24.1	24.9	24.9	25.0	1.33	1.7	0.9	25.3	1.37	1.8	1.1	16	LA
7PFTPU_AL	22.2	23.6	22.4 L	22.1	22.6	-1.19	1.6	0.7	23.1	-0.46	1.6	1.0	16	AL
92ZRQG	22.1	22.7	22.3	22.4	22.4	-1.40	1.7	0.3	22.5	-0.97	1.8	0.2 L	12	LU
9HN669	24.2 H	23.2	23.1	23.1	23.4	-0.36	2.4	0.5	23.9	0.18	2.4	0.8	8	XX
9UMVT2	25.8	23.7	23.1	23.8	24.1	0.40	2.1	1.1	26.3	2.18 *	2.1	1.4	16	LH
ANBEN7	24.2	24.7	24.6	23.9	24.3	0.62	1.8	0.4	24.5	0.65	1.9	0.3	16	LY
BFDX27	23.9	22.5	23.8	23.5	23.4	-0.32	2.0	0.6	24.8	0.93	2.0	1.1	16	LA
BWKZEK	24.2	22.3	23.3	23.2	23.2	-0.51	2.1	0.8	24.0	0.29	2.3	1.2	10	TT
CZCMMY	No Data	23.0	21.1 L	22.3	22.1	-1.65	1.2	1.0	22.6	-0.94	1.6	1.2	15	LU
CZFAZ8	25.5	25.1	24.8	25.8	25.3	1.64	1.4	0.5	25.1	1.19	1.3	0.5	16	LH
DC4TYU	23.4	25.0	24.0	23.3	23.9	0.19	2.0	0.8	24.1	0.34	1.8	0.7	16	LA
DH9K9R	23.1	23.4 H	20.0 *	24.0	22.6	-1.14	2.5	1.8 H	22.8	-0.75	2.3	1.6	13	LZ
FTMBWM	25.4	25.0	25.8	25.9 *	25.5	1.87	1.6	0.4	34.1	8.81 X	3.0	14.8 H	12	XX
FW7FH4	21.8	21.8	21.7	21.9	21.8	-2.02 *	1.6	0.1 L	21.9	-1.53	1.6	0.3	16	LY
FXXGEF_AL	49.9 XH	47.7 XH	47.5 XH	49.8 XH	48.7	26.06 X	22.0	1.3	49.3	21.61 X	23.7	2.1 H	12	AL
GB4MBY	24.3	25.5	25.4	24.5	24.9	1.22	1.7	0.6	25.2	1.28	1.7	0.6	7	LU
GRBN62	24.5	23.6	24.6	24.1 L	24.2	0.48	1.6	0.4	24.2	0.46	1.8	1.5	16	LA
GTJ4AL_AL	22.7	23.6	23.2	23.8	23.3	-0.42	1.8	0.5	23.8	0.06	1.8	0.6	16	XX
H2RVEA_AL	23.7	24.5 L	24.6	25.8	24.7	0.98	1.5	0.9	24.0	0.27	1.6	1.0	16	AL
HQRA7P	24.2	23.6	24.7	23.8	24.1	0.36	1.7	0.5	24.4	0.58	1.7	0.7	16	LA

Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42H2
TAPPI Official Test Method T826

Report #645
June 2023

	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**
HV4DYD	24.6	24.4	24.0 H	24.2 H	24.3	0.61	2.6	0.3	25.3	1.35	2.6	1.8	14	LW
J3JB7W	21.3 *	20.2 X	20.4 *	21.1	20.8	-3.10 X	1.5	0.5	21.2	-2.08 *	1.6	0.6	16	XX
JM2R4V	24.1	22.8	23.6	22.6 H	23.3	-0.49	2.3	0.7	22.9	-0.64	2.0	0.5	16	LZ
K93ZZ7	23.0	24.0	24.0	22.9	23.5	-0.26	1.6	0.6	22.8	-0.78	1.6	0.6	16	LH
KB7X7R	24.7	25.5	24.2	24.1	24.6	0.92	1.7	0.6	24.1	0.37	1.6	0.7	16	LH
LEQVMV_AL	26.2 *	25.4	24.5	25.4 H	25.4	1.70	2.0	0.7	25.2	1.26	1.9	0.7	12	XX
LQYPTE	21.6	24.3	20.3 *	21.5	21.9	-1.88	1.8	1.7 H	20.9	-2.34 *	1.7	1.9 H	12	LZ
LQYPTE_AL	45.0 XL	45.1 XL	44.3 XL	45.5 XL	45.0	22.14 X	0.0	0.5	44.1	17.18 X	0.0	2.8 H	12	AL
LRV74P	24.0 L	24.6 L	24.8 L	24.5 L	24.5	0.78	0.8	0.3	24.3	0.56	0.8	0.4	16	LH
M36BHP	22.3	22.4	22.2	22.3	22.3	-1.48	1.9	0.1 L	22.3	-1.18	1.8	0.3	16	LU
M3AKLH	23.8 H	23.7	24.2 H	22.8	23.6	-0.11	2.4	0.6	23.5	-0.16	2.8	0.5	16	LY
MB3R6N	24.0 L	25.7 L	25.4 L	25.2 L	25.1	1.39	0.4	0.7	24.5	0.65	0.9	0.9	16	LZ
MLJU7F	23.6	22.5	23.4	22.6	23.0	-0.73	1.8	0.5	23.8	0.14	1.7	0.9	16	LH
NR3C4N	22.8	23.4	23.0	22.8	23.0	-0.76	1.5	0.3	22.9	-0.64	1.6	0.4	16	XX
QQ3YTZ	22.0	22.4	23.1	22.4	22.5	-1.31	1.6	0.4	23.2	-0.37	1.7	0.6	16	LY
R3BY6K_AL	25.8	25.4	25.5	25.6	25.6	1.93	1.7	0.2	25.9	1.83	2.0	0.5	16	AL
RL2APY	22.4	21.9	22.6	22.1	22.3	-1.52	2.0	0.3	22.3	-1.15	1.8	0.6	16	LY
RL2APY_AL	23.5	24.0	23.9	23.7	23.8	0.07	1.8	0.2	23.7	0.00	1.8	0.3	16	AL
U4UYR7	23.8	23.8	24.0	23.9	23.9	0.16	1.3	0.1 L	23.7	0.02	1.4	0.4	16	TT
U6T3LG	23.5	No Data	23.4	No Data	23.4	-0.30	1.6	0.1	23.9	0.22	2.0	0.6	10	LU
V8BJG7	23.1	23.5	No Data	23.5	23.4	-0.37	1.6	0.3	23.5	-0.14	1.6	0.3	6	LU
V8BJG7_AL	23.6	24.0	No Data	23.5	23.7	-0.04	1.7	0.3	23.6	-0.11	1.6	0.4	6	AL
VGJDBY_AL	24.7	24.6	24.4	23.3	24.3	0.55	1.8	0.7	24.3	0.50	1.8	0.5	16	AL
VREFWF_AL	23.3	22.1	23.9	23.6	23.2	-0.55	1.6	0.8	23.8	0.14	1.7	0.7	16	AL
XKB23Q_AL	23.5	23.7	24.0	23.7	23.7	0.00	1.6	0.2	24.4	0.60	1.7	0.9	16	AL
XXZY7A	25.5	26.5 *	25.6	25.8	25.9	2.22 *	1.4	0.4	25.8	1.77	1.7	0.5	16	LH
YKM9PJ	24.7	23.4	23.6	23.5	23.8	0.06	1.7	0.6	23.6	-0.07	1.7	0.7	16	LU
Z4VT2D	21.1 *	18.8 X	20.9 *	20.8 *	20.4	-3.49 X	1.7	1.1	20.9	-2.31 *	1.6	1.7	16	LY
ZUVZ4T	23.4	23.8	23.8	23.9	23.7	0.00	1.6	0.2	23.8	0.07	1.7	0.3	16	LA

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4								
Wk Mean	23.77	23.92	23.53	23.50	**Month Mean**	23.73		**Grand Mean**	23.68			
Avg SDr	1.72	1.79	1.65	1.83	**Avg SD**	1.75		**Avg SD**	1.79			
SD btwn	1.18	1.08	1.31	1.25	**SD btwn Labs**	0.96		**SD btwn Labs**	1.19			
Labs Incld	60	56	57	59	**SD btwn Wks**	0.70		**SD btwn Wks**	0.94			
Labs Excld	2	4	2	2	**Labs Incld**	60		**Labs Incld**	61			
Labs not	2	4	5	3								

Containerboard Interlaboratory Testing Program
Analysis 223
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Report #645
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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 225
STFI, 35 lb Linerboard - 35E3
TAPPI Official Test Method T826

Report #645
June 2023

	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
26UBUE	24.2	23.7	23.8	23.1	23.7	0.44	1.7	0.5	23.7	0.40	1.9	0.4	12	LW
29RPHR	23.2	22.8 H	23.0	22.5	22.8	-0.42	2.2	0.3	22.6	-0.48	1.9	0.4	12	LW
2MPVD8	21.9	23.3	22.4	21.8	22.3	-0.93	1.8	0.7	22.5	-0.62	1.7	0.5	12	LY
2QJULB_AL	25.4	22.6	25.1	23.2	24.1	0.81	1.9	1.4	24.1	0.68	2.0	0.8	12	AL
2X3XTD	24.2	23.0	24.8	24.6	24.1	0.85	1.8	0.8	23.7	0.37	1.9	0.7	12	LH
3F3KJ4	22.7	23.0	23.2	21.9	22.7	-0.55	1.7	0.6	26.1	2.34 *	1.9	4.8 H	12	LW
3Z7BRQ	23.5	23.7	23.5	24.5	23.8	0.52	1.8	0.5	23.5	0.18	1.9	0.7	12	LW
47QLM8_AL	23.1	23.3	22.4	25.4	23.5	0.28	1.7	1.3	23.2	-0.02	1.9	0.9	12	AL
683PU4	23.1	23.3	24.1	22.5	23.3	-0.01	1.8	0.7	23.6	0.27	1.7	0.6	12	LA
6F9UFT	24.4	No Data	No Data	No Data	24.4	1.12	2.5	0.0	21.3	-1.57	1.8	2.2	9	LH
6F9UFT_AL	22.4	No Data	No Data	No Data	22.4	-0.87	1.7	0.0	21.3	-1.55	1.5	1.2	9	AL
6G4CJF	No Data	No Data	No Data	22.4	22.4	-0.88	2.0	0.0	23.6	0.28	1.8	0.7	9	LU
6JQX7B	26.0 *	24.7	24.0	25.1	25.0	1.70	1.9	0.8	24.9	1.34	1.8	0.7	12	LA
6ZDBK4	22.3 L	24.2 L	23.0 L	24.6 L	23.5	0.26	0.5	1.0	22.9	-0.30	0.6	1.4	12	LZ
7FUHJA	25.2	24.7	24.7	23.3	24.5	1.22	1.5	0.8	24.3	0.84	1.7	0.6	12	LH
7NMQ6Z	21.4	25.6 *H	25.4	24.5	24.2	0.97	2.2	1.9 H	24.9	1.35	2.0	1.5	12	LA
7PFTPU_AL	21.6	22.1	22.0	22.0	21.9	-1.35	1.6	0.2	22.0	-0.98	1.7	0.7	12	XX
92ZRQG	22.4	22.0	22.3 L	22.2	22.2	-1.05	1.5	0.2	22.5	-0.57	1.4	0.6	7	LA
9HN669	23.4	23.5	23.4 L	23.2 L	23.4	0.10	1.3	0.1	23.4	0.11	1.3	0.1 L	4	XX
9UMVT2	26.9 *	22.9	23.0	22.4 H	23.8	0.54	3.7	2.1 H	25.4	1.73	2.7	1.7	12	LH
ANBEN7	23.8	23.7	24.1	23.6	23.8	0.55	1.9	0.2	23.7	0.37	1.9	0.2 L	12	LA
BFDX27	23.1	23.3 H	24.2	21.8	23.1	-0.18	2.2	1.0	23.6	0.32	1.9	0.9	12	LA
BWKZEK	22.9	23.1	21.4	22.9	22.6	-0.69	2.0	0.8	23.8	0.49	2.0	1.2	11	TT
CZCMMY	No Data	22.1	21.6 L	22.8	22.2	-1.11	1.2	0.6	22.5	-0.55	1.5	0.7	11	LU
CZFAZ8	24.6 L	25.1	25.0	25.1	24.9	1.67	1.4	0.2	25.0	1.47	1.4	0.2 L	12	LH
DC4TYU	24.0	24.5	22.9	23.3	23.7	0.43	1.7	0.7	23.7	0.42	1.8	0.5	12	LA
DH9K9R	36.0 XH	30.0 XH	19.1 X	25.2	27.6	4.32 X	2.4	7.2 H	24.2	0.75	2.2	4.7 H	12	LZ
FTMBWM	21.0	23.2	23.0	21.6 L	22.2	-1.06	1.3	1.1	22.2	-0.83	1.3	1.1	4	LZ
FW7FH4	21.4 L	21.1	20.8 *	20.8	21.0	-2.26 *	1.7	0.3	21.5	-1.42	1.7	0.5	12	LY
FXXGEF_AL	34.6 XH	32.4 XH	35.1 XH	33.4 XH	33.9	10.65 X	12.4	1.2	33.9	8.65 X	12.4	1.2	4	AL
GB4MBY	25.5	24.9	24.9	25.4	25.1	1.89	1.7	0.3	24.7	1.18	1.7	0.9	6	LU
GTJ4AL_AL	23.2	23.3	23.3	23.7	23.3	0.08	1.8	0.2	23.3	0.03	1.7	0.4	12	XX
H2RVEA_AL	24.0	23.7	24.4	22.9 L	23.7	0.46	1.5	0.7	23.2	-0.03	1.4	1.1	12	AL
HQRA7P	24.5	24.0	25.1	25.6 *	24.8	1.54	2.0	0.7	23.9	0.52	1.9	0.9	12	LA
HV4DYD	23.4	23.7	23.4	24.0	23.6	0.35	2.1	0.3	23.9	0.54	2.1	1.6	11	LW

Containerboard Interlaboratory Testing Program
Analysis 225
STFI, 35 lb Linerboard - 35E3
TAPPI Official Test Method T826

Report #645
June 2023

	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
J3JB7W	19.8 *	21.0 *	20.5 *	19.8 *	20.3	-3.00 X	1.8	0.6	20.7	-2.06 *	1.7	0.6	12	XX
JM2R4V	22.6	22.0	22.9	22.3	22.5	-0.80	2.0	0.4	22.1	-0.91	1.8	0.7	12	LZ
K93ZZ7	22.0	23.6	22.6	23.0	22.8	-0.47	1.7	0.7	22.6	-0.55	1.6	0.6	12	LH
KB7X7R	24.3	23.9	23.2	23.0	23.6	0.32	1.8	0.6	23.3	0.06	1.6	0.6	12	LH
LEQVMV_AL	24.6 H	24.6 L	24.4 H	23.4	24.2	0.98	2.4	0.5	25.1	1.51	2.2	1.1	8	XX
LQYPTE	21.2	22.0	20.4 *	21.3	21.2	-2.08 *	1.6	0.7	20.4	-2.26 *	1.7	1.8	12	LZ
LQYPTE_AL	32.9 XL	33.6 XL	30.7 XL	33.2 XL	32.6	9.35 X	0.0	1.3	33.1	8.02 X	0.0	1.0	12	AL
LRV74P	23.7 L	24.5 L	25.4 L	24.3 L	24.5	1.22	0.7	0.7	24.0	0.63	0.7	0.7	12	LH
M36BHP	22.6	22.3	22.3	22.1	22.3	-0.95	1.9	0.2	22.0	-1.02	1.6	0.5	12	LU
M3AKLH	22.6	21.3	21.8	21.8 H	21.9	-1.40	2.5	0.6	22.7	-0.46	2.4	0.7	12	LY
MB3R6N	22.3 L	23.8 L	23.1 L	23.9 L	23.3	0.02	0.4	0.7	22.9	-0.30	0.6	1.4	12	LZ
MLJU7F	24.3	23.0	22.8	22.2 L	23.1	-0.18	1.8	0.9	23.5	0.26	1.9	0.8	12	LH
NR3C4N	22.9	23.0	22.8	21.3	22.5	-0.79	1.6	0.8	22.1	-0.88	1.4	0.9	12	XX
QQ3YTZ	21.9	21.2	21.0	21.4	21.4	-1.91	1.6	0.4	22.7	-0.44	1.8	1.1	12	LU
R3BY6K_AL	25.6 H	24.9	25.2	23.9	24.9	1.65	2.3	0.8	25.5	1.84	2.1	0.7	12	AL
RL2APY	22.0	21.8	22.1	22.5	22.1	-1.17	1.9	0.3	22.0	-1.04	1.8	0.8	12	LZ
RL2APY_AL	23.0	23.4	23.0	23.1	23.1	-0.14	1.7	0.2	22.9	-0.29	1.5	0.4	12	AL
U4UYR7	23.2	23.1	24.2 L	23.7 L	23.6	0.29	1.2	0.5	23.4	0.15	1.3	0.3 L	12	TT
U6T3LG	25.3 H	No Data	23.6	No Data	24.5	1.20	2.8	1.2	24.3	0.86	2.2	1.5	9	LU
V8BJG7	23.3	23.8	No Data	23.7	23.6	0.32	1.8	0.2	23.1	-0.10	1.8	0.6	6	LU
V8BJG7_AL	21.4 L	23.3 L	No Data	22.3	22.3	-0.96	1.3	0.9	21.9	-1.11	1.4	0.9	6	AL
VGJDBY_AL	23.1	22.9	23.5	23.7	23.3	0.00	1.7	0.4	23.5	0.20	1.8	0.5	12	AK
VREFWF_AL	23.3	21.3	22.6	23.7	22.7	-0.57	1.4	1.1	23.3	0.04	1.7	0.8	12	XX
XKB23Q_AL	24.0	23.9	24.0	24.1	24.0	0.77	1.6	0.1 L	24.0	0.64	1.8	0.5	12	AL
XXZY7A	24.6	25.2	24.3	24.2 L	24.5	1.28	1.4	0.5	24.8	1.24	1.7	0.5	12	LH
YKM9PJ	24.2	22.2	23.0	22.8	23.0	-0.24	1.7	0.8	23.1	-0.14	1.9	0.9	12	LU
Z4VT2D	20.2 *L	18.2 X	23.0	18.9 X	20.1	-3.23 X	1.6	2.1 H	20.0	-2.62 *	1.8	1.2	12	LZ
ZUVZ4T	22.8	22.2 L	22.3	22.6	22.5	-0.79	1.4	0.3	22.9	-0.27	1.6	0.5	12	LA

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative
Wk Mean	23.26	23.24	23.23	23.11	Month Mean	23.26	Grand Mean	23.23
Avg SDr	1.79	1.72	1.75	1.94	Avg SD	1.82	Avg SD	1.76
SD btwn	1.42	1.11	1.24	1.25	SD btwn Labs	1.00	SD btwn Labs	1.23
Labs Incld	58	55	55	57	SD btwn Wks	0.76	SD btwn Wks	1.25
Labs Excld	3	4	3	3	Labs Incld	58	Labs Incld	61
Labs not	2	4	5	3				

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 35 lb Linerboard - 35E3

TAPPI Official Test Method T826

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Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	**AL**	L & W Autoline 400
LA	L&W Autoline (223 Enrollment)	**LH**	L&W 282
LU	L&W 52 without moisture correction (was 53)	**LW**	L&W 53 with moisture correction (was 53M)
LY	L&W 152 (was 52M)	**LZ**	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)	**XX**	Instrument make/model not specified by lab

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

Report #645
June 2023

	Monthly Results				Cumulative Results					
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**		**Months**	**Inst**
2MPVD8	146.3	0.32	18.22		146.7	0.43	1.76	L	4	EV
2QJULB_AL	114.3	-1.21	22.65		130.0	-0.53	15.68		4	AL
2X3XTD	141.3	0.08	13.51		138.0	-0.07	4.51		4	EV
3Z7BRQ	130.0	-0.46	18.11		139.9	0.03	8.06		4	LA
6F9UFT_AL	121.9	-0.85	14.24		131.4	-0.45	14.30		4	AL
6JQX7B	149.4	0.46	26.13		163.8	1.41	16.39		4	LA
7NMQ6Z	154.3	0.70	23.00		162.1	1.31	6.77		4	LA
7PFTPU_AL	121.6	-0.86	16.56		118.4	-1.20	6.68		4	XX
9UMVT2	188.5	2.33 *	47.74 H		174.9	2.04 *	15.34		4	LS
ANBEN7	141.9	0.11	15.85		138.9	-0.02	2.75		4	LS
BFDX27	123.7	-0.76	15.29		101.3	-2.18 *	15.51		4	LA
CVM8XR	132.2	-0.36	10.50		141.5	0.13	14.11		3	LS
CZCMMY	182.1	2.02 *	14.14		160.2	1.20	22.61		4	EV
FW7FH4	155.4	0.75	13.41		150.5	0.65	3.28		4	EV
FXXGEF_AL	124.6	-0.72	14.61		141.3	0.12	20.19		3	AL
GRBN62	166.1	1.26	11.46		164.5	1.45	7.40		4	LA
HV4DYD	123.9	-0.75	14.55		129.6	-0.55	7.97		4	XX
LEQVMV_AL	161.3	1.03	22.06		140.5	0.07	29.49		2	XX
LQYPTE	0.3	-6.65 X	0.02 L		0.3	-7.98 X	0.03 L		3	LA
LQYPTE_AL	152.8	0.63	20.51		146.7	0.43	11.13		3	AL
M36BHP	126.7	-0.62	12.28		136.2	-0.17	8.31		4	EV
R3BY6K_AL	112.9	-1.28	12.65		117.7	-1.24	4.63		4	AL
RL2APY	146.7	0.33	13.87		146.0	0.38	4.70		4	XX
V8BJG7_AL	114.9	-1.18	9.85		114.4	-1.43	0.71		2	AL
VREFWF_AL	107.7	-1.53	13.95		109.4	-1.71	7.79		4	AL
XKB23Q_AL	120.2	-0.93	21.91		124.7	-0.83	8.58		4	AL
YKM9PJ	155.4	0.75	10.69		147.2	0.46	6.62		4	EV
Z4VT2D	136.4	-0.16	6.47 L		137.0	-0.13	12.38		4	LS
ZUVZ4T	158.6	0.90	19.39		146.5	0.41	19.34		4	EV

Consensus (All Labs) Results

Month Mean	139.68		**Grand Mean**	139.27
Avg SD	18.49		**Avg SD Months**	12.59
SD btwn Labs	20.97		**SD btwn Labs**	17.42
Labs Incld	28		**Labs Incld**	28

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

Report #645
June 2023

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 - 42H2
TAPPI Official Test Method T538

Report #645
June 2023

	Monthly Results				Cumulative Results					
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**		**Months**	**Inst**
2QJULB_AL	364.2	-0.73	5.39		359.8	-0.65	6.21		4	AL
47QLM8_AL	374.7	0.15	5.64		376.2	0.09	2.09	L	4	AL
683PU4	379.0	0.50	8.31		382.6	0.39	3.19	L	3	XX
6F9UFT_AL	358.9	-1.17	7.64		358.4	-0.71	0.41	L	4	AL
6G4CJF	385.7	1.06	10.46		382.8	0.39	2.85	L	4	XX
GTJ4AL_AL	381.5	0.71	4.67		383.4	0.42	1.34	L	4	XX
GY7UY3	390.3	1.44	6.24		399.4	1.15	10.13		3	TS
H2RVEA_AL	386.7	1.14	9.08		386.4	0.55	3.34	L	4	AL
JM2R4V	376.9	0.33	4.63		379.9	0.26	8.33		4	XX
LEQVMV_AL	380.8	0.65	5.49		377.2	0.14	5.09		2	XX
LQYPTE_AL	368.6	-0.36	10.54		368.3	-0.26	0.42		2	AL
MLJU7F	345.2	-2.31 *	3.44	L	345.6	-1.29	0.24	L	4	LA
NLYDTY	424.9	4.32 X	5.24		424.9	2.30 *	0.00		1	TS
R3BY6K_AL	367.2	-0.48	16.44	H	327.0	-2.14 *	86.06	H	4	AL
RL2APY_AL	370.7	-0.19	7.51		371.2	-0.13	2.15	L	4	AL
VGJDBY_AL	363.9	-0.76	7.09		362.7	-0.52	1.44	L	4	AL

Consensus (All Labs) Results

Month Mean	372.95		**Grand Mean**	374.11
Avg SD	8.13		**Avg SD Months**	22.64
SD btwn Labs	12.02		**SD btwn Labs**	22.08
Labs Incld	15		**Labs Incld**	16

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400		**LA**	L & W Autoline (229 Enrollment)
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 #645
June 2023

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2MPVD8	136.8	0.42	5.45		137.7	0.65	4.90	4	HZ
2QJULB	130.4	0.05	3.65		136.7	0.58	4.54	4	TM
2X3XTD	141.0	0.67	10.20		139.1	0.75	5.46	4	TM
3Z7BRQ	164.2	2.05 *	13.52		161.0	2.31 *	7.89	4	HY
43CX6V	110.4	-1.14	17.44		106.9	-1.55	4.95	2	XX
47QLM8	121.5	-0.48	4.87		123.8	-0.34	4.32	4	TM
683PU4	100.8	-1.71	5.89		109.1	-1.39	6.10	4	SC
6G4CJF	148.7	1.13	2.49		148.6	1.43	2.61	4	HY
7PFTPU	110.4	-1.14	17.44		108.1	-1.46	4.15	4	TM
BWKZEK	122.6	-0.42	4.28		123.0	-0.40	2.50	3	TM
CVM8XR	144.2	0.86	7.33		140.8	0.87	5.05	3	HY
CZCMMY	116.4	-0.78	13.22		116.5	-0.86	0.90 L	4	TM
DC4TYU	123.0	-0.39	3.94		124.0	-0.33	1.68	4	HZ
FXXGEF	165.4	2.12 *	16.96		126.5	-0.15	33.70 H	3	SC
GTJ4AL	134.8	0.31	7.65		139.4	0.77	6.85	4	HY
H2RVEA	56.3	-4.34 X	2.79		58.2	-5.03 X	1.75	4	LZ
MGRHEQ	118.5	-0.66	2.43		118.8	-0.70	2.43	4	SC
ND4BN2	143.0	0.79	4.18		143.7	1.08	2.33	4	TM
RL2APY	124.4	-0.31	8.91		128.4	-0.02	7.52	4	TM
VGJDBY	117.8	-0.70	6.49		119.5	-0.65	4.02	4	TM
YKM9PJ	126.4	-0.19	8.20		124.9	-0.26	4.98	4	TM
ZUVZ4T	121.4	-0.49	2.61		123.8	-0.34	2.69	4	TM

Consensus (All Labs) Results

Month Mean	129.62		Grand Mean	128.58
Avg SD	9.34		Avg SD Months	8.66
SD btwn Labs	16.90		SD btwn Labs	13.98
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	128.08	15.16	1.54	17
Modified Scott Bond Mechanics	156.44	10.97	26.82	2

Analysis Notes

H2RVEA -   Method used is not covered in this test. Data excluded from consensus calculation.

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

Report #645
June 2023

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

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

Report #645
June 2023

	Monthly Results				Cumulative Results			
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**	**Months**
2MPVD8	26.4	-0.33	4.04		26.9	-0.38	3.75	4
2QJULB	32.2	1.29	2.59		30.3	0.87	2.29	4
2X3XTD	26.4	-0.33	1.87		28.1	0.07	1.37	4
3Z7BRQ	27.8	0.06	2.77		27.1	-0.32	1.28	4
4KDNKC	25.2	-0.67	1.48		26.1	-0.69	1.48	4
683PU4	26.4	-0.33	1.14		26.5	-0.54	0.90	4
6G4CJF	28.0	0.11	0.40 L		26.3	-0.60	1.99	4
6JQX7B	25.9	-0.47	1.02		27.3	-0.24	2.55	4
7PFTPU	30.7	0.88	2.41		30.7	1.04	0.89	4
9UMVT2	21.0	-1.84	5.57 H		22.3	-2.11 *	3.39	4
ANBEN7	27.8	0.06	0.84		27.5	-0.15	0.26 L	4
CVM8XR	28.0	0.12	1.00		28.1	0.07	0.14	2
CZCMMY	32.6	1.40	5.68 H		30.7	1.02	1.42	4
FW7FH4	29.8	0.61	2.59		30.0	0.78	0.29 L	4
FXXGEF	34.1	1.82	1.62		33.7	2.16 *	1.01	3
G4KGND	25.4	-0.61	1.67		25.4	-0.94	0.00	1
GB4MBY	33.0	1.51	2.45		31.4	1.30	2.26	2
GTJ4AL	25.2	-0.67	5.02		28.6	0.24	2.25	4
H2RVEA	26.7	-0.25	1.30		25.8	-0.79	2.41	4
HV4DYD	27.0	-0.16	6.52 H		26.8	-0.43	0.53	4
JM2R4V	26.3	-0.36	2.64		29.5	0.59	4.07	4
JPTL8Q	29.6	0.56	3.21		27.8	-0.06	4.33	4
LRV74P	23.9	-1.03	0.89		24.6	-1.24	1.47	4
M36BHP	28.8	0.34	3.70		28.2	0.11	1.88	4
R3BY6K	30.9	0.93	2.46		31.2	1.22	2.18	4
RL2APY	27.4	-0.05	1.95		27.0	-0.34	1.43	4
V8BJG7	34.6	1.96 *	1.67		34.4	2.41 *	0.28	2
VGJDBY	23.0	-1.28	0.71		24.2	-1.40	1.66	4
VREFWF	24.0	-1.00	2.00		24.4	-1.31	0.78	4
Y82VMV	27.8	0.06	1.79		27.9	-0.02	0.66	4
YKM9PJ	18.6	-2.51 *	2.19		26.2	-0.64	5.45 H	4
Z4VT2D	28.2	0.17	0.84		28.9	0.35	0.79	4

Consensus (All Labs) Results

Month Mean	27.58		**Grand Mean**	27.91
Avg SD	2.82		**Avg SD Months**	2.20
SD btwn Labs	3.58		**SD btwn Labs**	2.69
Labs Incld	32		**Labs Incld**	32

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

Report #645
June 2023

Key to Instrument Codes Reported by Participants

ZZ   Instruments No Longer Tracked

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

Report #645
June 2023

	Monthly Results				Cumulative Results				
WebCode	**Mean**	**CPV**	**SD**		**Mean**	**CPV**	**SD Months**	**Months**	**Inst**
2MPVD8	36.8	2.36 *	2.26		33.7	1.16	2.24	4	LP
2QJULB_AL	33.8	0.62	2.88		32.3	0.02	1.29	4	AL
2X3XTD	32.5	-0.12	5.00	H	32.8	0.46	0.59	4	LP
3Z7BRQ	36.6	2.24 *	2.50		33.6	1.05	2.47	4	LP
47QLM8_AL	32.9	0.10	1.65		32.6	0.29	0.31	4	AL
4KDNKC	31.1	-0.91	4.39	H	31.2	-0.79	1.30	4	TD
6F9UFT_AL	34.5	1.02	2.80		33.3	0.86	0.82	4	AL
6G4CJF	31.9	-0.43	3.01		32.2	-0.05	0.94	4	TP
6JQX7B	30.7	-1.12	1.65		30.9	-1.01	0.86	4	LA
7NMQ6Z	34.4	0.97	3.27		32.8	0.40	1.61	4	LA
7PFTPU_AL	35.1	1.41	1.89		33.4	0.86	1.20	4	XX
9UMVT2	30.1	-1.49	5.09 H		29.5	-2.10 *	4.20 H	4	TD
ANBEN7	31.9	-0.44	1.66		32.4	0.16	0.41	4	LP
BFDX27	30.5	-1.24	2.33		32.2	-0.02	1.40	4	LA
BWKZEK	30.0	-1.51	2.67		29.9	-1.83	1.11	3	GA
CVM8XR	32.8	0.06	3.28		32.3	0.06	0.61	3	LP
CZCMMY_AL	33.1	0.24	1.49		33.3	0.82	0.80	4	AL
FXXGEF_AL	32.5	-0.10	1.70		32.3	0.08	0.41	3	AL
GB4MBY	32.5	-0.11	2.34		32.5	0.23	0.06	2	GG
GRBN62	34.6	1.11	2.63		32.2	-0.02	1.69	4	LA
GTJ4AL	30.3	-1.38	2.17		32.1	-0.13	1.96	4	GG
GTJ4AL_AL	32.6	-0.03	1.18		31.9	-0.30	0.87	4	XX
H2RVEA_AL	35.0	1.34	1.76		32.8	0.44	1.60	4	AL
HQRA7P	32.8	0.04	2.32		32.6	0.25	0.83	4	LP
HV4DYD	33.6	0.51	2.27		33.3	0.81	0.60	4	LP
JM2R4V	33.9	0.67	3.08		34.2	1.48	0.85	4	GA
JPTL8Q_AL	33.5	0.49	2.92		33.2	0.74	1.00	4	AL
LEQVMV_AL	33.5	0.45	1.93		33.4	0.86	0.17	2	XX
LQYPTE_AL	32.3	-0.23	3.27		30.9	-1.01	1.89	2	XX
M36BHP	34.3	0.92	2.40		32.5	0.23	1.54	4	LP
MLJU7F	29.2	-2.00 *	2.72		29.0	-2.54 *	2.83 H	4	LA
NUQN3U	31.2	-0.84	3.22		30.9	-1.06	0.88	4	GG
R3BY6K_AL	30.5	-1.23	2.55		30.1	-1.66	1.05	4	AL
RCXZJ9	30.6	-1.21	1.15	L	30.5	-1.37	1.04	4	LP
RL2APY	32.9	0.14	1.18		32.3	0.01	0.69	4	LP
RL2APY_AL	35.9	1.83	3.14		34.7	1.88	0.83	4	AL
TD6W34	32.4	-0.16	1.97		33.2	0.77	1.11	4	LP
U6T3LG_AL	32.0	-0.41	1.96		32.1	-0.09	0.12 L	4	AL
V8BJG7	33.9	0.70	2.95		33.0	0.62	1.21	2	GG

Containerboard Interlaboratory Testing Program
Analysis 237
Air Resistance, 42 lb Linerboard - 42H2
TAPPI Official Test Method T460

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
V8BJG7_AL	32.2	-0.27	1.75	32.5	0.20	0.42	2	AL
VGJDBY_AL	32.1	-0.33	2.21	31.0	-0.94	0.85	4	AL
VREFWF_AL	30.3	-1.36	2.16	30.5	-1.34	0.61	4	AL
XKB23Q_AL	33.5	0.49	1.24	33.6	1.02	0.16 L	4	AL
XXZY7A	31.6	-0.62	2.72	31.1	-0.91	1.21	4	XX
YKM9PJ	32.2	-0.30	3.12	34.6	1.82	1.82	4	GA
Z4VT2D	32.9	0.11	1.69	31.7	-0.42	0.85	4	XX

Consensus (All Labs) Results

Month Mean	32.68		Grand Mean	32.24
Avg SD	2.62		Avg SD Months	1.35
SD btwn Labs	1.75		SD btwn Labs	1.29
Labs Incld	46		Labs Incld	46

Key to Instrument Codes Reported by Participants

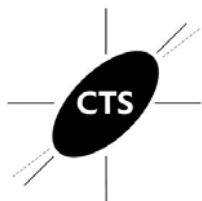|			
AL	L & W Autoline 400	**GA**	Gurley Precision #4340 Automatic Densometer
GG	Gurley Precision #4320 Densometer	**LA**	L&W Autoline (237 Enrollment)
LP	L&W Air Permeance Tester SE 166	**TD**	TMI Gurley Densometer
TP	Technidyne Profile/ plus Roughness & Porosity	**XX**	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12
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
26UBUE	58.2	57.8	57.4	58.8 H	58.0	0.08	4.3	0.6	57.6	-0.09	3.7	1.3	16	LZ
2MPVD8	60.0	58.6	59.2	57.9	58.9	0.43	3.9	0.9	58.1	0.14	3.7	1.3	16	LZ
2QJULB	58.2	57.5	55.6	57.8	57.3	-0.22	3.6	1.2	55.8	-0.82	3.5	1.9	16	LD
32ZWM4	58.9	59.1	59.8	59.9	59.4	0.62	4.3	0.5	59.0	0.52	3.4	0.7	16	LD
3F3KJ4	55.5 H	55.0	50.8 *	56.8	54.5	-1.30	5.5	2.6	55.4	-1.01	5.2	3.6	16	LD
3Z7BRQ	58.8	58.4	56.9	58.5	58.1	0.12	3.9	0.8	58.3	0.20	3.5	1.0	16	XX
4KDNKC	56.3	56.8	54.8	54.7	55.7	-0.85	3.9	1.1	54.6	-1.33	4.2	2.1	16	LZ
6G4CJF	No Data	No Data	No Data	57.1	57.1	-0.29	3.3	0.0	56.9	-0.36	3.5	2.1	13	LC
6GPNJN	54.1	55.1	54.5	55.2	54.7	-1.22	2.6	0.5	56.1	-0.69	2.9	1.2	16	LD
6JQX7B	55.5	58.0	58.1	60.5	58.0	0.07	3.4	2.0	56.1	-0.72	4.1	2.3	16	MB
6Y6Y89	62.6	59.0	61.4	61.5	61.1	1.29	4.6	1.5	61.9	1.76	4.1	2.6	16	TX
7FUHJA	58.3	60.4	59.7	60.4	59.7	0.73	4.0	1.0	60.3	1.08	4.1	2.6	16	LD
7NMQ6Z	59.3	64.7 *	62.2	60.4	61.7	1.50	4.2	2.3	60.0	0.95	4.3	1.8	16	TU
9HN669	63.3 *	61.7	60.7	59.6	61.3	1.38	4.3	1.6	62.9	2.14 *	4.2	2.0	8	LD
9VEU3U	58.4	58.0	58.3	57.7	58.1	0.10	2.6	0.3	54.6	-1.33	2.8	2.5	16	EM
ANBEN7	57.7	58.3	58.2	57.9	58.0	0.08	2.2	0.3 L	57.9	0.07	2.2	0.2 L	16	LD
BQ9DFA	43.6 X	64.2 *	59.6	57.9	56.3	-0.60	3.8	8.9 H	56.8	-0.40	3.9	4.9 H	12	LD
CVM8XR	No Data	No Data	No Data	56.7	56.7	-0.44	4.6	0.0	57.0	-0.31	3.6	1.8	3	LD
CZFAZ8	54.1	51.9 *	52.1 *	52.9	52.7	-2.00 *	2.3	1.0	54.3	-1.46	3.0	1.6	16	LD
DC4TYU	55.3	57.2	56.9	55.1	56.1	-0.68	3.5	1.1	56.0	-0.77	3.4	1.3	16	LD
DH9K9R	No Data	No Data	61.3	59.0	60.1	0.90	4.0	1.7	59.4	0.69	3.8	2.0	14	LD
FW7FH4	60.3	62.7	59.6	60.8	60.9	1.19	4.3	1.3	59.9	0.92	4.1	1.7	16	EN
GA7GQY	56.6	56.6	57.1	57.0	56.8	-0.40	1.7	0.3 L	57.6	-0.07	1.7	1.3	12	MB
GRBN62	54.5	55.1	55.6	54.9	55.0	-1.10	3.6	0.4	55.6	-0.92	3.7	3.4	16	MB
GTJ4AL	58.2	60.4	61.2	59.5	59.8	0.77	3.4	1.3	57.8	0.02	3.7	1.7	16	LD
H2RVEA	53.0	54.4	54.5	54.9	54.2	-1.43	2.6	0.9	54.3	-1.47	2.6	1.3	16	LD
HV4DYD	61.4	60.6	62.1	61.8	61.5	1.43	3.0	0.7	64.9	2.98 X	3.4	3.1	12	LD
J3JB7W	55.4 L	55.5 L	55.4 L	55.5 L	55.4	-0.94	0.3	0.1 L	57.6	-0.07	0.7	1.3	16	TU
JM2R4V	58.7	57.4	58.8	57.4	58.1	0.09	3.0	0.8	58.2	0.16	3.6	1.9	16	LZ
K93ZZ7	57.3	56.7	58.0	57.4	57.3	-0.19	2.8	0.5	57.4	-0.15	2.8	0.8	16	EM
KB7X7R	57.7	58.8	62.0	59.8	59.6	0.69	3.6	1.8	60.3	1.06	3.8	2.4	16	LD
LQYPTE	55.2	55.4	56.4	55.2	55.6	-0.89	2.4	0.6	56.9	-0.36	3.3	1.5	12	LD
LRV74P	60.4	62.0	62.0	63.7 *	62.0	1.65	3.7	1.3	62.7	2.09 *	4.3	1.5	16	LD
M9DLKR	56.8	57.4	56.7	57.7	57.2	-0.26	3.1	0.5	56.4	-0.60	3.0	1.2	16	TH
MB3R6N	60.2 L	59.1 L	59.9 L	59.5 L	59.7	0.73	0.6	0.5	60.0	0.93	1.2	1.8	16	TH

Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T809

Report #645
June 2023

	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**
MGRHEQ	51.9 *	51.8 *	51.5 *	57.3	53.1	-1.85	4.1	2.8	55.3	-1.04	3.7	2.7	16	LC
MLJU7F	55.6	53.9	53.7	53.8	54.2	-1.41	4.2	0.9	53.4	-1.83	4.4	1.2	16	LD
N3GEJU	58.3 L	58.4 L	58.4 L	58.4 L	58.4	0.21	0.5	0.1 L	58.4	0.28	0.7	0.1 L	16	LD
NR3C4N	58.8 L	60.7 L	60.4 L	60.2 L	60.0	0.86	1.4	0.8	60.3	1.06	1.4	1.7	16	XX
QQ3YTZ	55.1	55.3	53.8	56.3	55.1	-1.06	3.9	1.0	57.5	-0.10	5.8	2.6	16	LD
RCXZJ9	59.4	57.0 H	58.7	57.7	58.2	0.15	4.1	1.1	59.0	0.51	4.1	2.0	16	LD
RL2APY	53.4	54.0	54.9	51.7 *	53.5	-1.71	3.5	1.4	53.3	-1.88	3.0	1.3	16	LD
RRUA7E	57.7	61.1	60.2	60.5	59.9	0.80	3.1	1.5	59.7	0.81	3.5	1.4	16	LD
TD6W34	58.1	58.5	57.9	56.4	57.7	-0.04	3.4	0.9	57.8	0.01	3.4	1.1	16	LD
U4UYR7	59.6 H	61.2	59.8	57.7	59.6	0.68	5.0	1.4	58.4	0.25	5.3	1.4	16	XX
U6T3LG	61.6	60.5	59.5	61.2	60.7	1.13	3.6	0.9	59.4	0.69	3.7	1.7	15	LC
VF7JTD	62.9	61.2	62.8	63.0	62.5	1.82	4.2	0.8	62.2	1.87	3.4	1.5	16	TB
VREFWF	60.0	55.5	60.2	58.4	58.5	0.27	4.1	2.2	58.9	0.46	4.0	2.3	16	LZ
X7U4ZB	60.0	60.6	61.1	63.7 *	61.4	1.38	2.4	1.6	60.6	1.19	2.3	1.3	16	LC
XXZY7A	53.5	57.1	54.2	54.4	54.8	-1.19	3.4	1.6	55.3	-1.03	3.0	2.0	16	LD
YKM9PJ	52.3	54.7	54.6	55.9	54.4	-1.36	3.2	1.5	54.2	-1.52	3.2	2.0	16	LD
ZUVZ4T	59.7	58.4 H	57.1 L	59.3	58.6	0.31	3.3	1.2	58.9	0.46	3.1	1.0	16	LC

Consensus (All Labs) Results

Wk Mean	57.66	58.03	57.92	58.01	**Month Mean**	57.83	**Grand Mean**	57.77	
Avg SDr	3.76	3.51	3.33	3.39	**Avg SD**	3.52	**Avg SD**	3.54	
SD btwn	2.80	2.89	3.00	2.64	**SD btwn Labs**	2.55	**SD btwn Labs**	2.38	
Labs Incld	48	49	50	52	**SD btwn Wks**	1.77	**SD btwn Wks**	1.94	
Labs Excld	1	0	0	0	**Labs Incld**	52	**Labs Incld**	51	
Labs not	3	3	2	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		

Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM12

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
26UBUE	67.3	67.5	68.2	67.6	67.6	-0.04	3.1	0.4	66.8	-0.88	3.3	1.4	16	LZ
2QJULB	68.1	69.2	68.4	68.5	68.6	0.17	4.7	0.5	68.8	-0.06	4.0	1.8	16	LD
3F3KJ4	66.1	67.3	69.1	71.1	68.4	0.13	3.1	2.2	68.7	-0.08	3.6	3.6	16	LD
3Z7BRQ	70.3	70.8 H	70.8	71.5	70.9	0.70	3.5	0.5	69.9	0.40	3.6	1.7	16	XX
6G4CJF	No Data	No Data	No Data	69.7	69.7	0.44	3.1	0.0	70.1	0.47	3.0	1.8	13	LC
ANBEN7	68.7	69.0	68.4	68.8	68.7	0.21	2.2	0.3 L	68.3	-0.26	2.3	0.4 L	16	LD
GA7GQY	66.9 L	66.9	66.9	66.1	66.7	-0.26	1.6	0.4	67.8	-0.46	1.7	1.1	12	MB
GTJ4AL	70.2 H	70.7	72.4	70.1	70.8	0.69	4.2	1.1	71.8	1.14	3.8	1.5	16	LD
H2RVEA	73.5	72.0	71.9	70.9	72.1	0.99	2.6	1.1	71.0	0.81	2.8	1.7	16	LD
HV4DYD	71.8	69.5	67.9	70.1	69.8	0.46	3.3	1.6	68.8	-0.06	3.5	2.9	12	LD
LQYPTE	65.0	68.3	62.9	64.0 *	65.1	-0.64	4.0	2.3	65.4	-1.42	3.8	1.7	12	XX
MB3R6N	64.7 L	64.9 L	64.7 L	66.3 L	65.1	-0.62	0.7	0.8	64.8	-1.67	2.4	1.4	16	TH
MLJU7F	57.5 *	55.5 XH	58.1 *H	56.2 XH	56.8	-2.54 *	8.2	1.2	59.0	-3.98 X	7.4	5.6 H	16	LD
NR3C4N	69.9 L	69.1 L	70.8 L	71.0 L	70.2	0.55	1.4	0.9	70.6	0.65	1.6	1.1	16	XX
RCXZJ9	72.4	73.4	75.0	71.2	73.0	1.20	3.9	1.6	73.0	1.64	3.7	1.8	16	LD
RL2APY	58.1 *	58.7 X	58.9 *	59.4 X	58.8	-2.09 *	2.9	0.5	56.0	-5.16 X	3.6	3.2	16	LD
TD6W34	69.6	71.5	70.5	64.8	69.1	0.29	4.6	2.9	69.9	0.40	3.8	2.3	16	LD
U6T3LG	71.1	76.7 *	71.8	72.1	72.9	1.18	3.6	2.6	71.8	1.15	3.6	2.3	15	LC
VREFWF	60.3 H	67.2 L	63.1	66.6	64.3	-0.81	4.7	3.2	64.5	-1.79	4.4	2.9	16	LZ

Consensus (All Labs) Results

Wk Mean	67.31	69.61	67.77	68.86	Month Mean	67.83		Grand Mean	68.94	
Avg SDr	4.23	3.05	3.60	3.23	Avg SD	3.78		Avg SD	3.32	
SD btwn. . .	4.69	2.88	4.62	2.52	SD btwn Labs	4.32		SD btwn Labs	2.50	
Labs Incld	18	16	18	17	SD btwn Wks	1.62		SD btwn Wks	1.99	
Labs Excld	0	2	0	2	Labs Incld	19		Labs Incld	17	
Labs not Recv	1	1	1	0						

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T822

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						
32ZWM4	43.1		43.7		44.6		44.3		43.9	0.32		3.3	0.7		44.2	0.08		2.8	0.5		16	LD
3Z7BRQ	44.3		46.2		47.6		43.3		45.3	1.28		3.2	1.9		44.5	0.24		3.1	1.4		16	XX
6G4CJF	No Data		No Data		No Data		43.5		43.5	0.00		3.1	0.0		45.0	0.54		3.7	2.0		13	LC
6GPNJN	44.5		46.2		45.2	H	45.4		45.3	1.28		4.3	0.7		45.3	0.76		2.9	0.7		16	LC
6JQX7B	43.5	L	44.6		44.9		44.0		44.3	0.55		2.5	0.6		47.0	1.84		4.0	3.2		16	MB
6Y6Y89	43.1		38.1	*	36.9	*	37.1	*	38.8	-3.19	X	3.3	2.9	H	43.7	-0.28		3.5	3.8	H	16	LZ
7FUHJA	44.2		45.4		43.7		43.2		44.1	0.45		3.1	0.9		44.7	0.35		3.0	1.4		16	LD
9VEU3U	31.3	XH	37.5	*H	31.4	XH	37.7	H	34.5	-6.14	X	7.1	3.6	H	37.7	-4.10	X	6.0	3.2		16	EM
BQ9DFA	45.1	H	44.4	H	42.6	H	39.2		42.8	-0.42		5.2	2.6	H	43.7	-0.24		4.6	2.3		12	LD
DC4TYU	45.3		40.8		43.7		42.1		43.0	-0.34		2.6	1.9		43.9	-0.15		2.7	1.6		16	LD
DH9K9R	No Data		No Data		44.9		44.9		44.9	0.98		3.9	0.0		46.3	1.41		3.7	1.6		14	LZ
GA7GQY	43.8	L	44.0		43.5		43.3		43.6	0.11		1.6	0.3		43.3	-0.50		1.6	0.6		12	MB
GTJ4AL	43.6		45.2		46.7		42.8		44.6	0.75		3.3	1.8		45.0	0.56		3.0	1.5		16	LD
H2RVEA	44.2	L	44.4		44.6		43.5		44.2	0.48		2.6	0.5		44.1	0.01		2.9	1.0		16	LD
HQRA7P	44.1		44.9		42.7		40.6		43.1	-0.27		2.7	1.9		43.1	-0.64		2.7	1.6		16	LD
J3JB7W	45.4	L	44.5	L	44.7	L	44.4	L	44.8	0.88		0.4	0.4		44.5	0.25		0.8	0.7		16	TU
JM2R4V	41.8		43.4		43.3		46.1		43.7	0.13		3.3	1.8		44.0	-0.09		3.2	1.9		16	LD
KB9J6T	41.1		42.8		42.3		41.0		41.8	-1.14		2.4	0.9		43.7	-0.29		3.2	1.7		16	TH
LQYPTE	41.0		42.7		40.3		41.8	H	41.5	-1.37		4.4	1.0		41.2	-1.87		4.0	3.0		12	LD
M9DLKR	34.8	X	37.8	*	38.1	*	36.2	*	36.8	-4.57	X	2.3	1.5		36.7	-4.72	X	2.3	1.1		16	TH
MB3R6N	43.7	L	44.2	L	43.0	L	44.6	L	43.9	0.30		0.5	0.7		43.9	-0.13		1.0	1.0		16	TH
N3GEJU	44.6	L	44.6	L	44.5	L	44.6	L	44.6	0.76		0.4	0.0	L	44.6	0.29		0.5	0.1	L	16	LD
RCXZJ9	41.8		42.9		45.5		43.4		43.4	-0.04		2.9	1.5		44.6	0.31		3.0	1.5		16	LD
RRUA7E	39.9		41.5		40.2		40.8		40.6	-1.97	*	3.7	0.7		45.4	0.82		3.2	3.1		16	EM
TD6W34	40.3		42.2		41.7		43.6		41.9	-1.05		3.7	1.4		42.6	-0.96		3.7	1.6		16	LD
VF7JTD	39.5	*	41.9		43.8		43.7		42.2	-0.84		3.4	2.0		41.3	-1.78		2.7	1.7		16	XX
X7U4ZB	40.7		39.4		40.1		40.1		40.1	-2.31	*	2.2	0.5		40.4	-2.34	*	2.5	1.1		16	XX
XXZY7A	44.6		46.6		46.2		45.4		45.7	1.52		2.1	0.9		47.0	1.83		2.8	1.8		16	LD

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative
Wk Mean	43.05	43.07	43.29	42.52	Month Mean	43.47	Grand Mean	44.12
Avg SDr	2.89	3.26	3.09	3.15	Avg SD	3.06	Avg SD	3.04
SD btwn	1.82	2.57	2.54	2.56	SD btwn Labs	1.47	SD btwn Labs	1.58
Labs Incld	24	26	26	28	SD btwn Wks	1.28	SD btwn Wks	1.85
Labs Excld	2	0	1	0	Labs Incld	25	Labs Incld	26
Labs not	2	2	1	0				

Containerboard Interlaboratory Testing Program

Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T822

Report #645
June 2023

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T826

	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
2QJULB	14.0	14.1	14.5	13.4	14.0	0.00	1.3	0.5	14.2	0.32	1.1	0.6	16	LA
6G4CJF	No Data	No Data	No Data	13.6	13.6	-0.59	1.0	0.0	14.1	0.21	1.0	0.3	13	LU
6GPNJN	13.7 L	14.5	14.6	14.1	14.2	0.31	1.1	0.4	14.3	0.52	1.1	0.4	16	LH
6JQX7B	15.1 L	14.8 L	14.5	14.9	14.8	1.27	0.8	0.2	14.7	1.05	1.0	0.6	16	LA
7FUHJA	14.6 L	15.2	14.8	13.5	14.5	0.83	1.0	0.7	14.6	0.91	1.2	0.4	16	XX
7NMQ6Z	14.1 H	15.5 *	15.5	15.7 *	15.2	1.83	2.3	0.7	15.3	1.97 *	1.9	1.0	16	LA
92ZRQG	14.2 L	13.6	13.3	13.2	13.6	-0.65	1.2	0.5	13.7	-0.41	1.1	0.4	8	LU
ANBEN7	14.5	14.9	14.7	14.3	14.6	0.97	1.2	0.3	14.5	0.88	1.2	0.2	16	LA
CVM8XR	No Data	No Data	No Data	13.1	13.1	-1.44	1.1	0.0	13.1	-1.23	0.9	0.1 L	3	LH
DH9K9R	No Data	No Data	14.5 L	12.7	13.6	-0.62	1.1	1.3	12.8	-1.66	1.2	0.8	6	XX
GRBN62	14.5 H	13.9 L	13.9	14.3	14.1	0.21	2.5	0.3	14.0	0.03	2.0	0.8	16	LA
HQRA7P	14.7	14.7	14.8	14.4	14.7	1.05	1.1	0.2	14.5	0.85	1.1	0.7	16	LH
JM2R4V	13.6 L	14.0	14.4	13.9	14.0	-0.04	1.2	0.3	13.6	-0.54	1.1	0.5	16	LZ
K93ZZ7	14.0	13.8	14.5	14.4	14.2	0.27	1.1	0.3	13.7	-0.41	1.0	0.5	16	LH
LQYPTE	12.5 *L	13.5	12.5	13.9	13.1	-1.39	1.1	0.7	12.6	-2.02 *	1.1	1.1	12	LZ
LRV74P	14.3 L	14.6 L	15.2 L	14.6	14.7	1.08	0.6	0.4	14.5	0.79	0.6	0.4	16	LH
MB3R6N	13.9 L	14.4 L	13.5 L	14.4 L	14.0	0.06	0.3	0.5	14.1	0.22	0.4	0.8	16	LZ
NR3C4N	12.8	14.2	12.9	12.7	13.2	-1.30	1.1	0.7	13.3	-1.02	1.3	0.8	16	XX
RL2APY	12.8	12.9 *H	12.0 *	12.7	12.6	-2.15 *	1.6	0.4	12.9	-1.54	1.4	0.5	12	LB
U4UYR7	14.1	14.0	14.3	14.3	14.2	0.27	1.2	0.1	13.7	-0.42	1.1	0.5	16	TT
V8DDV7	13.8 L	13.7	13.3 H	13.1	13.5	-0.81	1.4	0.3	14.2	0.39	1.1	0.5	16	TX
VGJDBY	14.9	14.2	14.7	14.5	14.6	0.86	1.0	0.3	14.6	0.91	1.1	0.4	16	LA
YKM9PJ	14.7 L	13.7	13.6	13.9	14.0	-0.02	0.9	0.5	14.1	0.20	1.1	0.6	16	LU

Consensus (All Labs) Results

Wk Mean	14.04	14.21	14.09	13.90	Month Mean	14.00	Grand Mean	13.95
Avg SDr	1.75	1.24	1.00	1.02	Avg SD	1.26	Avg SD	1.18
SD btwn	0.70	0.62	0.91	0.76	SD btwn Labs	0.65	SD btwn Labs	0.67
Labs Incld	20	20	21	23	SD btwn Wks	0.52	SD btwn Wks	0.62
Labs Excld	0	0	0	0	Labs Incld	23	Labs Incld	23
Labs not	3	3	2	0				

Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T826

Report #645
June 2023

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

End of Report