Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #664 - January 2025

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BO18	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC16	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC16	Edgewise Compressive Strength by T839, Corrugated Board
205	42L2	Bursting Strength (Mullen), 42 lb Linerboard
206	52J2	Bursting Strength (Mullen), 52 lb Linerboard
215	42L2	Ring Crush, 42 lb Linerboard
216	52J2	Ring Crush, 52 lb Linerboard
223	42L2	STFI, 42 lb Linerboard
224	52J2	STFI, 52 lb Linerboard
228	42L	Roughness - Stylus Method, 42 lb Linerboard
229	42L2	Roughness - Sheffield Method, 42 lb Linerboard
231	42L	Internal Bond, 42 lb Linerboard
234	42L	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42L2	Air Resistance, 42 lb Linerboard
240	CM13	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM13	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM13	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM13	STFI, 26 lb Corrugating Medium

Collaborative Testing Services, Inc.
CONTAINERBOARD INTERLABORATORY TESTING PROGRAM

INTRODUCTION

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

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

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

USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE

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

Material	Lot Code	Dates in Use
26# Corrugating Medium	CM13	September 2023 - Current
	CM12	June 2022 - August 2023
31# Linerboard	31K1	August 2024 - Current
	35E3	June 2022 - June 2024
42# Linerboard	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).

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2XUN2B	531.7	-1.43	46.62		531.7	-1.43	0.00	1	EX
39MRGN	544.6	-0.94	43.89		544.6	-0.94	0.00	1	ES
3J9VQA	587.4	0.68	38.87		587.4	0.68	0.00	1	EX
43Y8D9	603.0	1.28	5.66	L	603.0	1.28	0.00	1	EX
44TXJM	536.8	-1.24	33.01		536.8	-1.24	0.00	1	EX
47CCMN	556.6	-0.49	40.89		556.6	-0.49	0.00	1	ER
76RCHP	521.2	-1.83	35.19		521.2	-1.83	0.00	1	ER
A9KDC3	590.0	0.78	25.20		590.0	0.78	0.00	1	EX
BYETME	536.0	-1.27	41.76		536.0	-1.27	0.00	1	LG
FAYQHZ	570.9	0.06	38.58		570.9	0.06	0.00	1	LG
H8J6LV	571.3	0.07	41.34		571.3	0.07	0.00	1	LS
L3WPJT	561.3	-0.31	51.06		561.3	-0.31	0.00	1	LS
NR7ME4	572.5	0.12	39.38		572.5	0.12	0.00	1	LM
P8GQFN	668.1	3.75 X	27.64		668.1	3.75 X	0.00	1	LG
PCQ7K7	567.8	-0.06	28.70		567.8	-0.06	0.00	1	EX
TKP4YJ	566.6	-0.11	22.81		566.6	-0.11	0.00	1	LG
UPNEUJ	588.4	0.72	4.34	L	588.4	0.72	0.00	1	EX
UR8TXK	613.4	1.67	40.55		613.4	1.67	0.00	1	LG
VC7EBV	580.2	0.41	40.15		580.2	0.41	0.00	1	LO
VJU29L	579.1	0.37	39.20		579.1	0.37	0.00	1	LG
VKMRE2	516.3	-2.02 *	9.00		516.3	-2.02 *	0.00	1	ER
WERKBH	588.2	0.71	9.96		588.2	0.71	0.00	1	ET
X3G8RW	608.4	1.48	26.93		608.4	1.48	0.00	1	EX
XF74VF	477.5	-3.49 X	58.57		477.5	-3.49 X	0.00	1	TB
XGZUZU	577.1	0.29	38.51		577.1	0.29	0.00	1	ER
XXJNRJ	571.8	0.09	66.18		571.8	0.09	0.00	1	EX
Y877HX	595.2	0.98	31.73		595.2	0.98	0.00	1	LM

Consensus (All Labs) Results

Month Mean	569.43	Grand Mean	569.43
Avg SD	36.50	Avg SD Months	0.00
SD btwn Labs	26.30	SD btwn Labs	26.30
Labs Incld	25	Labs Incld	25

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	578.36	22.39	8.92	7
Clip sealing	565.96	27.47	3.47	18

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	LM	Lansmont 122-15k
LO	Lansmont 152-30k	LS	Lansmont Squeezer
TB	TMI Monitor/Compression Tester, Model 17-70		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2XUN2B	45.3	-0.73	2.17		46.1	-0.53	1.59	4	LC
7WHN6Q	48.9	0.41	2.30		50.0	0.76	1.09	4	XX
BYETME	53.1	1.69	2.68		49.6	0.62	2.39	4	EX
E7FCEZ	51.7	1.27	2.00		53.0	1.70	2.06	4	XX
HL3TVU	46.6	-0.30	1.86		48.3	0.20	1.27	4	LC
L3WPJT	47.2	-0.12	4.84	H	46.1	-0.51	0.93	4	LD
RF2YQP	46.7	-0.29	3.43		46.1	-0.51	1.52	4	TS
UPNEUJ	49.7	0.64	0.91	L	49.7	0.63	0.00	1	TL
XGZUZU	41.5	-1.89 *	4.78	H	42.0	-1.85 *	1.86	4	EN
XPR93F	45.0	-0.80	1.04	L	44.4	-1.08	1.83	4	TS
XXJNRJ	48.0	0.11	1.18	L	49.5	0.57	1.22	4	LC

Consensus (All Labs) Results

Month Mean	47.60	Grand Mean	47.71
Avg SD	2.80	Avg SD Months	1.63
SD btwn Labs	3.23	SD btwn Labs	3.09
Labs Incld	11	Labs Incld	11

Key to Instrument Codes Reported by Participants

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2XUN2B	54.7	1.08	2.07		54.5	1.15	0.73	4	LC
39MRGN	55.0	1.16	1.59		52.9	0.79	1.90	4	LD
3Q32JB	54.5	1.04	1.96		53.4	0.90	0.97	4	LC
43Y8D9	49.3	-0.22	3.47		49.0	-0.11	0.74	4	CT
47CCMN	54.8	1.11	3.14		51.7	0.51	3.44	4	LD
76RCHP	51.2	0.23	1.81		50.9	0.33	0.92	4	EM
7WHN6Q	49.4	-0.20	1.88		50.5	0.23	1.59	4	XX
A233Y2	42.3	-1.91	1.99		40.2	-2.12 *	4.43 H	4	IX
B9YYL4	54.6	1.06	1.35		54.5	1.14	0.24 L	4	EM
BH7V72	55.0	1.15	1.59		56.2	1.53	1.15	4	TG
BYETME	48.8	-0.34	2.56		50.1	0.14	1.18	3	LY
CEZTT6	52.4	0.54	2.27		50.6	0.26	2.04	4	TU
FAYQHZ	55.7	1.32	1.76		54.7	1.20	3.26	4	MK
FVE9PW	39.4	-2.63 *	3.38		38.6	-2.48 *	0.63	4	XX
H8J6LV	51.8	0.38	1.52		48.7	-0.17	2.56	4	EM
L3WPJT	48.9	-0.32	1.51		48.7	-0.18	0.59	4	LD
LB9ND6	51.1	0.22	1.80		51.2	0.40	1.85	3	LD
LKEQEV	46.2	-0.98	3.18		46.2	-0.75	0.45	4	BU
NR7ME4	47.0	-0.79	0.97 L		47.3	-0.50	0.55	4	EM
P8GQFN	50.5	0.07	3.92 H		50.4	0.21	2.97	4	EM
PCQ7K7	48.6	-0.40	1.11		43.3	-1.41	4.08	4	LD
RF2YQP	47.1	-0.75	2.36		47.1	-0.54	2.15	4	TS
RW9VAN	50.6	0.08	1.65		52.0	0.59	1.46	4	EM
TKP4YJ	50.2	0.00	3.13		50.6	0.27	2.85	4	EM
UR8TXK	50.5	0.06	0.96 L		49.7	0.05	0.76	4	BU
V2CZDK	57.0	1.64	4.49 H		56.1	1.53	1.98	4	TE
VC7EBV	42.9	-1.78	1.95		42.8	-1.52	0.63	4	LD
VKMRE2	46.7	-0.86	1.27		43.4	-1.38	3.06	4	LD
WERKBH	54.3	0.98	2.18		52.1	0.60	1.50	4	TD
X7UAFD	45.4	-1.18	1.95		44.5	-1.13	2.12	4	TD
XF74VF	55.0	1.16	0.90 L		54.0	1.03	1.67	4	LD
XGZUZU	48.7	-0.37	1.88		47.5	-0.44	1.45	4	EN
XPR93F	48.2	-0.49	1.01		44.6	-1.11	2.96	4	TS
XXJNRJ	47.9	-0.57	1.46		51.1	0.39	2.50	4	LC
Y877HX	52.3	0.51	2.64		52.1	0.60	1.44	4	TG

Consensus (All Labs) Results

Month Mean	50.22	Grand Mean	49.46
Avg SD	2.25	Avg SD Months	2.09
SD btwn Labs	4.12	SD btwn Labs	4.38
Labs Incld	35	Labs Incld	35

Key to Instrument Codes Reported by Participants

BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EN	Emerson 2200
IX	Instron (model not specified)	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W 830
MK	Mark-10 ESM303	TD	TMI Digital Crush Tester, Model 17-09
TE	TMI Monitor/Compression Tester, Model 17-60	TG	TMI Digital Crush Tester, 17-76
TS	TMI Digital Crush Tester, Model 17-56	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2XUN2B	112.3	117.7	111.2	112.9	113.5	-0.42	7.2	2.8	113.6	-0.42	6.9	3.2	12	AH
32N8ET	129.3 X	122.5	120.2	123.7	123.9	1.93 *	8.5	3.9	120.3	1.27	8.3	4.0	12	LC
39MRGN	118.2	114.2	110.6	117.9	115.2	-0.03	8.9	3.6	112.7	-0.64	8.2	3.6	12	LA
3HTC7C	144.8XL	145.7 X	146.0 XH	139.4 XH	144.0	6.46 X	11.0	3.1	141.8	6.67 X	10.5	4.0	8	XX
43Y8D9	121.5 H	121.5	120.5	116.5	120.0	1.05	11.3	2.4	119.2	0.98	9.6	2.8	12	XX
47CCMN	115.3 H	113.6	116.6	111.6	114.3	-0.25	9.1	2.2	116.1	0.22	8.6	2.2	12	AH
69WFVL	117.6	114.3	113.4	116.5	115.4	0.02	10.0	1.9	116.2	0.24	7.8	2.4	12	LB
6AF6J8	118.9 L	118.7 L	118.9 L	118.6 L	118.8	0.77	1.1	0.1 L	110.1	-1.31	2.3	6.5	12	LA
6T4QYN_AL	113.9	115.2	113.6	117.3	115.0	-0.08	7.1	1.7	115.8	0.14	9.5	2.1	12	AL
7RMWTM_AI	107.3	103.5 *	107.0	103.6 X	105.3	-2.27 *	9.8	2.1	107.9	-1.85	8.2	3.7	12	AL
7WHN6Q	117.0	112.0	113.7	111.8	113.6	-0.40	6.9	2.4	114.3	-0.24	11.6	3.6	12	LC
7WX8PN	109.7	110.2	108.0	No Data	109.3	-1.37	6.8	1.2	110.3	-1.26	8.3	2.1	4	LJ
7WX8PN_AL	122.6	122.9	No Data	No Data	122.8	1.67	10.4	0.2	123.2	1.99	*10.0	0.7 L	3	AL
83JEN8	119.7 L	119.2 L	119.3 L	119.2 L	119.4	0.90	2.8	0.2 L	113.4	-0.47	2.8	8.9 H	12	AH
8LFKH9	132.0 X	134.3 X	133.1 XH	147.4 X	136.7	4.82 X	10.1	7.2 H	136.2	5.27 X	11.1	5.7	12	AX
9BVT74_AL	113.8	112.1	113.0 H	112.5 H	112.9	-0.57	11.1	0.7	111.9	-0.85	10.1	2.6	12	AL
9HD7A9	115.6	107.2	105.9	109.4	109.5	-1.32	7.8	4.3	111.3	-1.00	7.6	3.5	12	XX
BPN8GG_AL	117.7	117.5	No Data	No Data	117.6	0.50	7.8	0.1	117.9	0.65	8.6	2.2	10	XX
EC7LNY_AL	115.0	116.6	115.4	117.1	116.0	0.15	8.0	1.0	116.0	0.19	8.2	2.0	12	AL
GGU88W	115.2	115.1	116.7	115.6	115.7	0.06	5.9	0.7	115.8	0.13	5.6	0.9	12	AH
GRW98V	121.3	124.3	119.6	122.0	121.8	1.45	6.5	1.9	121.4	1.55	7.3	1.8	8	XX
JR72UA_AL	120.4	126.4 *	125.1 *	123.0	123.7	1.89	8.4	2.6	120.0	1.20	9.0	3.4	12	AL
JZHDTR	114.9	113.7	114.9	113.5	114.3	-0.25	6.2	0.8	114.9	-0.08	6.4	1.3	12	LJ
L3WPJT	113.3	120.0	119.7	123.0	119.0	0.82	8.0	4.0	118.0	0.69	7.7	3.2	12	LA
LCKKLU_AL	115.7	110.9	117.3	120.3	116.0	0.15	8.0	3.9	117.2	0.49	8.5	3.7	12	AL
LDEBQ9_AL	109.5	116.2	120.2	120.5	116.6	0.28	6.4	5.1	116.5	0.32	7.5	3.4	12	AL
LTPTZW_AL	110.0 L	105.8 *	104.9 *L	99.7 X	105.1	-2.32 *	3.6	4.2	108.5	-1.69	5.0	3.9	12	AL
N4Z446	108.7	115.3	110.1	111.2	111.3	-0.91	6.6	2.8	111.1	-1.06	7.8	2.3	12	LC
PCQ7K7	116.8 L	112.2	108.0	109.6	111.7	-0.84	7.0	3.8	111.5	-0.95	7.8	2.8	12	AH
PPF4NP	115.2	116.2	114.9 L	115.5	115.5	0.02	4.5	0.6	115.6	0.08	4.9	0.6 L	12	LA
PTBXJ7	118.7	122.1	118.9	No Data	119.9	1.02	8.8	1.9	120.2	1.25	9.8	1.7	11	LJ
QVYQWZ_AI	121.1	114.0	121.2	115.9	118.1	0.61	6.0	3.6	118.4	0.78	8.0	3.4	12	AL
QWU9X2	112.2	113.1	112.9	115.4	113.4	-0.45	8.3	1.4	116.8	0.39	9.6	3.5	12	TB
QXKB24_AL	105.6 *	111.7	105.8	110.9	108.5	-1.55	8.4	3.2	109.0	-1.57	7.9	3.1	12	XX
R7YGFM	114.0	119.5	117.8	114.2	116.4	0.23	6.7	2.7	117.2	0.48	7.9	3.8	12	LC

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42L2

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
R7YGFM_AL	116.8	118.8	117.3	117.4	117.6	0.50	8.4	0.9	117.9	0.67	8.5	2.7	12	AL
RMJ8C2_AL	110.2 H	110.4	118.7	117.4	114.2	-0.27	9.2	4.5	115.2	-0.01	8.4	3.3	12	AL
U2EBUW	139.7 X	123.5	141.4 X	134.0 X	134.7	4.36 X	5.6	8.1 H	131.3	4.03 X	7.6	7.6 H	12	ME
V2CZDK	113.1	123.1	122.8	123.0	120.5	1.16	8.5	4.9	118.4	0.79	8.5	4.8	12	LC
VKMRE2	102.3 X	115.4	110.5	114.2	110.6	-1.08	8.6	5.9 H	110.4	-1.22	9.0	3.4	12	LZ
W94Z3W	119.4	117.8	111.8	119.8	117.2	0.42	8.9	3.7	115.8	0.13	10.1	3.0	12	LA
XF74VF	109.5	113.6	110.7	114.3	112.0	-0.76	9.0	2.3	109.1	-1.56	7.6	2.7	12	XX
XJ4QLJ	111.3	106.8	110.8	108.6	109.4	-1.35	8.8	2.1	109.9	-1.34	8.0	2.0	12	LA
XKWGRX_AI	112.9	119.3	118.6	117.9 L	117.2	0.41	7.3	2.9	118.6	0.85	7.4	2.8	12	AL
XZQ7NU	113.1	109.7	110.2	110.3	110.8	-1.03	5.8	1.5	110.6	-1.17	7.4	2.9	12	LC
YDB8JR	120.0	117.4	119.6	118.5	118.9	0.79	6.6	1.2	122.4	1.81	6.7	3.1	12	LA
YFYGVD_AL	122.3	119.9	114.1	116.9	118.3	0.66	9.5	3.5	117.9	0.66	9.5	3.7	12	AL
YMZWFE	115.6	114.4	114.1	115.5	114.9	-0.11	5.3	0.8	115.1	-0.05	5.1	0.8 L	12	TP
ZCV3KT_AL	123.7 *	119.0	117.7	119.9	120.1	1.07	7.1	2.6	120.8	1.40	8.1	2.9	11	AL
ZJQBYT_AL	113.1	112.4	109.9	110.1	111.4	-0.91	8.3	1.6	112.7	-0.64	7.7	2.5	12	AL

Consensus (All Labs) Results

Wk Mean	115.33	115.77	114.72	116.08	Month Mean	115.37	Grand Mean	115.26
Avg SDr	8.00	7.39	8.24	7.29	Avg SD	7.82	Avg SD	8.05
SD btwn Labs	4.36	5.08	4.94	4.13	SD btwn Labs	4.43	SD btwn Labs	3.97
Labs Incld	45	48	45	41	SD btwn Wks	2.81	SD btwn Wks	3.28
Labs Excld	5	2	3	5	Labs Incld	47	Labs Incld	47
Labs not Rcvd	0	0	2	4				

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

	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
2XUN2B	108.4	111.0	113.5	109.1	110.5	-0.02	10.9	2.3	110.2	-0.16	11.4	3.6	12	AH
32N8ET	112.3	114.8	112.7	114.4	113.6	0.79	13.5	1.2	113.9	1.07	12.9	2.8	12	LC
39MRGN	110.0	106.3	101.7	103.8	105.5	-1.36	10.7	3.6	106.7	-1.32	11.2	3.3	12	LA
3HTC7C	138.5 XH	157.5 XH	153.4 XH	157.0 XH	151.6	10.87 X	21.1	8.9 H	152.2	13.74 X	24.6	7.0	8	XX
43Y8D9	116.5	106.5	112.0	112.0	111.8	0.31	12.6	4.1	110.6	-0.02	12.8	4.3	12	XX
47CCMN	116.2	111.5	113.9	110.1	112.9	0.62	10.3	2.7	113.0	0.78	10.5	2.3	12	AH
69WFVL	114.7	113.4	115.2	115.1	114.6	1.06	12.5	0.8	116.5	1.93	10.2	4.8	12	LB
6AF6J8	128.9 *L	129.0 XL	129.0 *L	128.7 *L	128.9	4.85 X	1.1	0.1 L	120.0	3.10 X	2.2	6.7	12	LA
6T4QYN_AL	105.4	106.9	109.0	107.3	107.2	-0.91	11.8	1.5	112.4	0.56	11.5	5.2	12	XX
7RMWTM_AI	113.8	109.8	109.4	107.4 H	110.1	-0.13	13.3	2.6	109.2	-0.49	13.6	4.4	12	AL
7WX8PN	107.7	109.3	104.6	No Data	107.2	-0.90	13.8	2.4	106.5	-1.37	12.8	2.3	5	LJ
7WX8PN_AL	114.5	111.8	No Data	No Data	113.2	0.68	11.9	1.9	111.0	0.12	10.7	2.8	4	AL
83JEN8	129.5 *L	129.3 XL	128.6 *L	129.5 *L	129.2	4.94 X	3.4	0.4 L	129.1	6.08 X	3.1	1.2	12	AH
8LFKH9	127.1 *	118.7	129.8 *	126.9 *	125.6	3.98 X	12.9	4.8	122.1	3.79 X	13.8	5.3	12	XX
9BVT74_AL	96.9 *	109.5	114.2	100.4	105.2	-1.42	10.5	8.0 H	104.6	-2.01 *	10.4	6.2	8	AL
9HD7A9	103.8	108.7	108.1	103.7	106.1	-1.20	11.0	2.7	107.2	-1.14	11.1	3.9	12	XX
BPN8GG_AL	114.0	111.2	No Data	No Data	112.6	0.54	14.3	2.0	110.2	-0.14	13.0	4.7	10	XX
EC7LNY_AL	112.4	113.9	111.8	116.1	113.6	0.79	12.2	1.9	111.5	0.28	11.2	3.5	12	AL
GGU88W	111.2	110.1	108.5	111.7	110.4	-0.06	7.4	1.4	110.5	-0.07	6.2	1.1	12	AH
GRW98V	114.9	107.8	116.8	119.5	114.8	1.10	10.2	5.0	113.9	1.05	9.9	4.5	8	XX
JR72UA_AL	116.4	119.6 *	116.5	117.8	117.6	1.85	7.7	1.5	112.1	0.49	12.4	4.6	12	AL
JZHDTR	113.6	112.5	112.2	111.7	112.5	0.50	5.9	0.8	109.2	-0.47	7.2	2.6	12	LJ
L3WPJT	111.7	111.9	116.4	No Data	113.3	0.73	13.2	2.7	112.3	0.54	12.6	2.9	11	LA
LCKKLU_AL	110.2	106.2	113.5	100.2	107.5	-0.81	11.1	5.7	109.1	-0.53	11.5	4.8	12	AL
LDEBQ9_AL	112.8	108.7	110.4	115.3	111.8	0.32	8.1	2.9	111.3	0.20	13.4	3.0	12	AL
LTPTZW_AL	106.1	100.5 *	101.4	98.5	101.6	-2.37 *	6.6	3.2	106.2	-1.47	7.1	4.5	12	AL
N4Z446	103.1	104.3	106.7	102.0	104.0	-1.75	7.5	2.0	107.3	-1.11	9.3	4.0	12	LA
PCQ7K7	107.2	110.4	106.4	99.6	105.9	-1.24	10.6	4.5	106.1	-1.50	11.5	4.6	12	AH
PPF4NP	111.1	111.5	111.6	111.1	111.3	0.19	6.6	0.3 L	111.7	0.35	6.1	0.5 L	12	LA
PTBXJ7	114.2	117.0	114.0	No Data	115.1	1.18	9.9	1.7	113.8	1.02	12.0	4.1	11	LZ
QVYQWZ_AI	114.1	113.4	111.4	105.3	111.0	0.11	10.2	4.0	115.5	1.60	10.0	4.4	12	AL
QWU9X2	109.1	109.1	112.0 H	113.5	110.9	0.09	14.3	2.2	114.0	1.10	12.0	3.7	11	TB
QXKB24_AL	102.7	102.6 *	104.0	113.1	105.6	-1.32	9.2	5.0	106.2	-1.46	9.6	4.6	12	XX
R7YGFM	111.0	115.7	112.3	113.3	113.1	0.66	11.5	2.0	111.4	0.23	12.5	4.0	12	LC
R7YGFM_AL	121.2	114.3	111.4	114.1	115.3	1.24	11.7	4.2	112.9	0.75	13.0	4.1	12	XX

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 52 lb Linerboard - 52J2

TAPPI Official Test Method T807

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
RMJ8C2_AL	109.6	112.0	113.4	107.5	110.6	0.01	11.4	2.6	111.8	0.38	12.7	2.8	12	AL
U2EBUW	127.4 *	125.0 X	130.8 *	132.3 *	128.9	4.85 X	9.4	3.3	129.1	6.10 X	11.1	6.7	12	LA
V2CZDK	113.6	116.3	116.2	119.4	116.4	1.53	11.2	2.4	114.2	1.17	11.0	3.1	12	XX
VKMRE2	110.5	110.6	112.3	109.2	110.6	0.01	10.9	1.3	109.6	-0.36	11.5	4.1	12	LZ
W94Z3W	108.7	111.6	105.7	112.2	109.5	-0.28	11.2	3.0	110.1	-0.20	11.8	3.3	12	LA
XF74VF	108.5	103.2	106.2	103.3	105.3	-1.40	9.4	2.5	106.4	-1.42	9.9	3.4	12	XX
XJ4QLJ	111.3	98.0 XH	101.3	106.6	104.3	-1.67	12.6	5.9	104.7	-1.97	*13.3	4.3	12	LA
XKWGRX_AI	112.7	113.9	118.6	113.7 L	114.7	1.10	8.7	2.6	112.6	0.65	13.9	3.5	11	AL
XZQ7NU	108.4	113.4	109.5	109.0	110.1	-0.14	8.6	2.3	110.2	-0.16	10.1	1.8	12	LC
YDB8JR	114.5	117.1	116.8	112.2	115.2	1.21	7.4	2.3	115.1	1.47	9.6	2.6	12	LA
YFYGVD_AL	111.3	110.2	117.5	111.0	112.5	0.51	13.4	3.4	113.4	0.89	12.2	4.5	12	AL
YMZWFE	109.7	109.2 L	109.4	111.2	109.9	-0.19	5.9	0.9	110.2	-0.15	5.4	0.9 L	12	TP
ZCV3KT_AL	116.7	107.6	117.9	109.8	113.0	0.64	9.7	5.1	114.1	1.14	10.6	5.5	12	AL
ZJQBYT_AL	111.4	109.3	107.0 H	106.3	108.5	-0.56	13.6	2.3	110.0	-0.23	12.8	3.0	12	AL

Consensus (All Labs) Results

Wk Mean	112.43	110.75	112.65	111.51	Month Mean	110.59	Grand Mean	110.67
Avg SDr	10.48	10.63	10.92	10.06	Avg SD	10.81	Avg SD	11.20
SD btwn Labs	6.40	4.14	6.88	7.77	SD btwn Labs	3.77	SD btwn Labs	3.02
Labs Incld	48	44	46	43	SD btwn Wks	3.20	SD btwn Wks	3.80
Labs Excld	1	5	1	1	Labs Incld	44	Labs Incld	44
Labs not Rcvd	0	0	2	5				

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

	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
2R2PMF	97.4	97.7	98.1	99.5	98.2	0.68	2.2	0.9	99.0	1.06	2.3	1.4	12	LD
2XUN2B	100.2	97.0	98.9	98.3	98.6	0.78	2.0	1.3	97.2	0.56	2.2	1.5	12	LC
32N8ET	98.4	96.3	98.1 L	98.1	97.7	0.56	1.8	1.0	99.3	1.14	2.5	3.3	12	LD
3Q32JB	90.0	92.5	94.3	91.0	92.0	-0.86	3.1	1.9	92.5	-0.79	2.8	2.2	12	LC
47CCMN	96.2	94.9	94.7	94.7	95.1	-0.07	2.7	0.7	94.9	-0.10	2.7	0.9	12	LD
69WFVL	97.3	97.1	98.1	99.8 H	98.1	0.65	3.8	1.2	95.7	0.13	3.5	3.0	12	LD
6AF6J8	92.9 L	93.0 L	93.2 L	92.7 L	92.9	-0.63	0.8	0.2 L	92.0	-0.94	0.7	1.0	12	TU
6T4QYN	94.4	95.2	99.8	99.0	97.1	0.41	2.4	2.7	95.6	0.10	2.7	1.9	12	LD
83JEN8	92.3	92.1	93.6	92.9	92.7	-0.67	1.9	0.7	89.2	-1.73	2.0	4.9	12	LD
8LFKH9	82.1 X	84.3 *	78.7 X	82.2 XH	81.8	-3.38 X	4.5	2.3	82.7	-3.59 X	4.6	2.4	12	LD
9BVT74	93.5	97.2	97.0	96.8	96.1	0.17	3.1	1.7	95.7	0.12	2.9	1.1	12	LD
BH7V72	93.8	94.7	94.8	95.5	94.7	-0.18	2.3	0.7	96.5	0.34	2.1	2.0	12	TH
BYETME	95.6	95.3	94.7	94.8 L	95.1	-0.08	2.8	0.4	95.8	0.14	2.4	1.9	10	LG
CXXVVF	99.8	101.2	100.9	99.0	100.2	1.19	2.9	1.0	100.0	1.35	3.0	2.0	12	TU
EC7LNY	66.5 XH	65.8 XH	66.6 XH	67.0 XH	66.5	-7.20 X	10.1	0.5	66.8	-8.16 X	10.2	0.5 L	12	LD
F47NCF	94.8	94.1 L	93.4 L	93.7	94.0	-0.35	2.0	0.6	94.3	-0.28	1.8	1.0	12	LZ
GRW98V	101.3	100.3	99.8	103.2	101.2	1.42	3.7	1.5	100.0	1.36	3.7	2.1	8	LD
HYPZTU	102.2	100.3	101.7	101.1	101.3	1.46	3.0	0.8	98.4	0.90	3.1	2.4	12	MB
JZHDTR	95.5	96.3	95.1	96.7	95.9	0.11	2.2	0.7	95.5	0.05	2.7	1.2	12	LD
L3WPJT	95.1	99.5	97.7	95.7	97.0	0.39	3.0	2.0	96.8	0.42	2.6	1.5	12	LD
N4Z446	94.7	96.1	92.4	94.7	94.5	-0.24	2.7	1.5	95.3	0.01	2.7	1.1	12	LD
QWU9X2	91.9	92.3	97.1 H	98.1	94.8	-0.15	5.6	3.2	94.6	-0.20	5.1	3.6	10	LD
QXKB24	96.6	94.1 L	96.7	96.7	96.0	0.15	2.5	1.3	95.5	0.05	2.5	1.0	12	LD
R7YGFM	77.7 XH	87.1	94.4	90.3	87.4	-2.00 *	12.7	7.1 H	88.5	-1.95 *	7.9	4.0	12	LD
RMJ8C2	97.4	98.7	99.0	99.4	98.6	0.79	2.9	0.9	97.5	0.65	3.0	2.1	12	LD
RW9VAN	92.8	93.0	92.3	91.9	92.5	-0.73	3.0	0.5	88.9	-1.84	3.0	2.8	12	EM
TKBC9N	92.4	92.1	93.0	91.0	92.1	-0.83	2.4	0.9	96.5	0.34	2.7	5.4	12	XX
TL63E3	102.8	101.3	102.2	101.3	101.9	1.60	2.2	0.8	99.1	1.09	2.2	2.8	12	LD
U2EBUW	97.9	104.5 *	96.2 H	97.7	99.1	0.91	4.8	3.7	99.5	1.21	5.0	5.5	12	LX
V2CZDK	100.7	100.7	99.7	99.3	100.1	1.16	2.6	0.7	98.2	0.83	2.6	1.6	12	MB
VKMRE2	85.4 *	85.0 *	No Data	85.2 *	85.2	-2.54 *	3.9	0.2 L	87.9	-2.10 *	3.5	2.4	11	LD
WY3ANF	88.6	86.4	88.9 *	89.6	88.4	-1.76	3.2	1.4	90.0	-1.52	3.2	3.3	12	EM
X7UAFD	95.0	94.4	94.7	94.9	94.7	-0.17	1.7	0.3 L	95.3	-0.01	1.7	0.5 L	12	MB
XF74VF	100.0	99.0	99.8	101.3	100.0	1.14	3.3	1.0	100.0	1.36	3.3	1.0	4	XX
XGZUZU	87.2	87.3	86.4 X	87.0 *	87.0	-2.11 *	2.9	0.4	89.2	-1.73	2.5	2.7	12	EN

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42L2

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
XKWGRX	96.2	97.2	96.3	96.9	96.7	0.30	3.4	0.5	96.6	0.37	3.2	1.1	12	LC
XZQ7NU	90.9	92.2	91.1 H	91.9 H	91.5	-0.98	4.4	0.6	92.1	-0.90	3.7	1.7	12	LD
YDB8JR	97.2	96.3	96.8	96.7	96.8	0.33	2.8	0.4	98.9	1.04	3.5	2.9	12	LC
YMZWFE	94.2	94.2	92.5	95.1	94.0	-0.36	3.2	1.1	94.3	-0.27	2.9	1.2	12	TH
ZCV3KT	86.3 *H	102.3	100.5	100.8	97.5	0.51	4.7	7.5 H	94.4	-0.25	5.0	12.8 H	11	LZ

Consensus (All Labs) Results

Wk Mean	95.10	95.20	96.32	95.84	Month Mean	95.44	Grand Mean	95.29
Avg SDr	2.90	3.01	3.45	2.93	Avg SD	3.65	Avg SD	3.25
SD btwn Labs	4.27	4.73	3.21	4.13	SD btwn Labs	4.03	SD btwn Labs	3.50
Labs Incld	37	39	36	38	SD btwn Wks	2.13	SD btwn Wks	3.26
Labs Excld	3	1	3	2	Labs Incld	38	Labs Incld	38
Labs not Rcvd	0	0	1	0				

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)
XX	Instrument make/model not specified by lab		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2R2PMF	136.7	137.1	137.9	136.7	137.1	1.21	3.1	0.5	137.7	1.55	3.0	1.2 L	12	LD
2XUN2B	133.3	131.9	130.3	130.3	131.4	0.25	3.9	1.4	130.5	0.23	3.5	1.7	12	LC
32N8ET	130.2	131.1	130.2	130.8	130.6	0.11	2.6	0.4 L	130.9	0.30	3.2	1.4	12	LD
3Q32JB	126.7	124.5	125.7	123.1	125.0	-0.83	4.1	1.6	124.6	-0.86	3.8	1.4	12	LC
47CCMN	129.5	126.1	130.3	126.2	128.0	-0.32	4.4	2.2	128.1	-0.20	3.9	1.9	12	LD
69WFVL	134.3 H	133.3	135.9 H	134.8	134.6	0.78	7.4	1.1	131.9	0.49	5.2	2.4	12	LD
6AF6J8	129.4 L	129.9 L	129.8 L	129.5 L	129.7	-0.05	1.1	0.2 L	124.0	-0.97	1.1	4.2	12	TU
6T4QYN	134.0	132.9	133.5	134.2	133.7	0.63	4.3	0.6	131.8	0.46	4.1	2.8	12	LD
83JEN8	122.8	122.8	122.6 L	122.9	122.8	-1.20	2.3	0.1 L	122.1	-1.31	2.3	1.5	12	LD
8LFKH9	120.2	114.8 *	114.9 *	112.1 XH	115.5	-2.42 *	5.9	3.4	115.2	-2.57 *	6.4	4.3	12	LD
9BVT74	129.6	130.8	132.2	129.4	130.5	0.10	5.1	1.3	130.7	0.27	4.0	1.9	12	LD
BH7V72	128.2	131.5	130.0	130.5	130.0	0.02	3.3	1.4	128.5	-0.14	4.2	2.3	12	TH
BYETME	133.4	131.2	134.0	129.3	132.0	0.34	3.1	2.1	130.0	0.13	3.9	2.2	12	LY
CXXVVF	130.9	132.5	132.6	130.8	131.7	0.29	3.7	1.0	132.8	0.64	4.9	4.5	12	TU
EC7LNY	88.2 XH	86.3 XH	88.5 XH	87.3 XH	87.5	-7.12 X	10.9	1.0	89.3	-7.32 X	11.3	3.1	12	LD
F47NCF	129.4	127.4	130.8 L	127.0	128.6	-0.22	3.9	1.8	130.3	0.19	3.1	2.2	8	LZ
GRW98V	141.8	137.3 H	139.4	141.1 *	139.9	1.67	5.6	2.0	137.1	1.44	5.7	3.3	8	LD
HYPZTU	140.0	139.4	138.9	134.7	138.3	1.40	3.6	2.4	134.2	0.90	4.8	3.5	12	MB
JZHDTR	129.2	129.7	129.5 L	128.8	129.3	-0.10	3.1	0.4 L	128.6	-0.12	3.2	0.9 L	12	LD
L3WPJT	129.2	129.5	134.2	No Data	131.0	0.18	6.2	2.8	133.8	0.82	4.6	2.8	11	LD
N4Z446	128.9	126.4	129.7	127.7	128.2	-0.29	3.2	1.5	128.8	-0.08	3.6	1.6	12	LD
QWU9X2	125.3	120.1 H	141.1	129.8	129.1	-0.14	6.1	8.9 H	131.5	0.42	5.6	6.6	9	LD
QXKB24	132.7	131.8	131.4 L	132.3	132.0	0.35	3.2	0.6	131.2	0.35	3.7	1.5	12	LD
R7YGFM	124.8	123.5	133.6	129.9	128.0	-0.33	5.3	4.7	124.9	-0.80	4.9	4.5	12	LD
RMJ8C2	128.5	135.6	130.4	135.7	132.6	0.44	3.5	3.7	134.2	0.91	3.9	3.1	12	LD
RW9VAN	119.7	121.8	119.8	122.1	120.8	-1.53	4.0	1.2	120.8	-1.55	4.4	1.9	12	EM
TKBC9N	123.2	125.7	126.4	127.2	125.6	-0.73	3.4	1.8	128.7	-0.10	3.9	2.9	12	LZ
TL63E3	137.1 L	136.3	138.1	133.5	136.2	1.06	2.4	2.0	134.2	0.90	3.5	2.4	12	LD
U2EBUW	141.8	145.0 *H	137.9 H	135.6	140.1	1.70	7.7	4.2	137.0	1.42	8.5	10.8 H	12	LY
V2CZDK	132.6	134.7	132.8	136.5	134.2	0.71	5.1	1.8	132.6	0.61	4.7	2.3	12	MB
VKMRE2	119.7	119.8	No Data	119.3 *	119.6	-1.74	4.3	0.3 L	123.7	-1.01	4.5	3.0	11	LD
WY3ANF	121.3	119.1	121.7	124.9	121.7	-1.38	4.5	2.4	123.0	-1.15	4.7	2.0	12	EM
X7UAFD	128.0 L	128.5 L	128.2 L	128.5 L	128.3	-0.27	1.7	0.2 L	128.8	-0.09	1.7	0.5 L	12	MB
XF74VF	133.6	135.4	135.3	135.3	134.9	0.83	4.4	0.9	134.9	1.03	4.4	0.9 L	4	XX
XGZUZU	115.9 *	119.1	116.7 *	116.3 *	117.0	-2.18 *	4.0	1.5	117.1	-2.23 *	4.0	1.0 L	12	EN

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 52 lb Linerboard - 52J2

TAPPI Official Test Method T822

Report #664
January 2025

	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
XKWGRX	134.4	139.1	138.0	134.4	136.5	1.10	4.3	2.4	136.2	1.27	4.4	2.0	12	LC
XZQ7NU	126.8	125.0	124.5	123.3	124.9	-0.84	4.7	1.5	127.6	-0.30	5.0	2.9	12	LD
YDB8JR	139.4	138.1	136.7	136.3	137.6	1.29	5.3	1.4	135.0	1.05	5.5	3.2	12	LC
YMZWFE	127.8	127.3	128.4	127.7	127.8	-0.36	4.1	0.4 L	121.6	-1.40	3.4	12.3 H	12	TH
ZCV3KT	115.6*H	140.9	134.9	139.5	132.7	0.47	6.6	11.7 H	126.4	-0.52	7.9	18.4 H	12	LZ

Consensus (All Labs) Results

Wk Mean	129.38	129.91	131.01	130.16	Month Mean	129.93	Grand Mean	129.26
Avg SDr	4.30	4.09	4.71	4.44	Avg SD	4.45	Avg SD	4.50
SD btwn Labs	6.55	6.88	6.20	5.57	SD btwn Labs	5.95	SD btwn Labs	5.46
Labs Incld	39	39	38	37	SD btwn Wks	3.02	SD btwn Wks	4.76
Labs Excld	1	1	1	2	Labs Incld	39	Labs Incld	39
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
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)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42L2

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
2XUN2B	24.4	24.7	24.9	24.9	24.7	-0.20	1.7	0.2	24.5	-0.18	1.5	0.4	12	LU
32N8ET	25.0	25.1	24.7	24.1	24.7	-0.24	1.5	0.4	24.8	0.04	1.6	0.3	12	LA
3HTC7C	24.2	24.6	24.6	23.5	24.2	-0.74	1.4	0.5	22.2	-2.53 *	1.5	2.2 H	8	XX
47CCMN	24.7	24.8	24.5	24.0	24.5	-0.45	1.7	0.4	24.4	-0.34	1.7	0.3	12	LU
69WFVL	25.5	25.6	25.6	25.6	25.6	0.73	1.3	0.0 L	25.5	0.82	1.4	0.4	12	LU
6AF6J8	25.8	25.0	25.1	26.0	25.5	0.62	1.7	0.5	22.8	-1.96 *	1.6	2.0 H	12	ID
6T4QYN_AL	26.5 L	25.1	25.3	24.8	25.4	0.55	1.3	0.8	25.4	0.66	1.2	0.7	12	AL
7RMWTM_AI	28.2 *L	28.9 XL	27.2 *L	27.6 *L	28.0	3.34 X	0.0	0.7	27.1	2.41 *	0.0	1.2	12	AL
7WHN6Q	24.8	23.3	24.9	24.0	24.3	-0.71	1.6	0.7	24.1	-0.60	1.4	0.6	12	LA
7WX8PN	26.2	24.0	No Data	No Data	25.1	0.18	1.6	1.5	24.9	0.19	1.5	1.1	3	LH
7WX8PN_AL	24.9	23.0	No Data	No Data	24.0	-1.04	1.8	1.3	23.5	-1.24	1.6	1.2	3	AL
83JEN8	36.3 X	36.8 X	33.8 X	35.2 X	35.5	11.56 X	2.0	1.3	32.9	8.30 X	3.5	4.1 H	12	XX
8LFKH9	25.8 L	25.2 L	24.7 L	25.1 L	25.2	0.29	0.0	0.5	25.2	0.44	0.0	0.3	12	LH
9BVT74_AL	23.7	25.1	25.4	22.7	24.2	-0.74	1.8	1.3	23.3	-1.48	1.8	1.1	12	AL
9HD7A9	27.1	25.1	25.4	25.6 L	25.8	0.97	1.3	0.9	25.7	1.00	1.3	0.7	12	LH
BPN8GG_AL	26.4 L	25.8 H	No Data	No Data	26.1	1.27	2.0	0.4	25.9	1.23	1.4	0.8	10	XX
BYETME	25.4	25.7	26.1 H	25.4	25.7	0.82	1.8	0.4	25.5	0.75	1.8	0.7	10	BK
C2VJ8F	24.9	24.4	24.5 H	26.0 H	24.9	0.03	2.5	0.8	24.8	0.07	2.4	0.6	12	LH
CXXVVF	26.0	26.3	26.1	26.4 H	26.2	1.41	2.0	0.2	25.5	0.76	1.6	0.8	12	LA
EC7LNY	23.9	24.0	24.0	23.7	23.9	-1.12	1.4	0.2	24.1	-0.65	1.5	0.7	12	LY
EC7LNY_AL	23.1	23.2	22.9 *	23.1	23.1	-2.00 *	1.6	0.1	24.0	-0.75	1.8	0.8	12	AL
EPVKE2	24.8	25.2	25.7	24.9	25.2	0.28	1.4	0.4	25.1	0.41	1.6	0.8	12	LA
F47NCF	12.2 XL	12.0 XL	12.2 XL	12.2 XL	12.2	-13.88 X	0.6	0.1 L	12.2	-12.71 X	0.6	0.1 L	12	XX
FVE9PW	25.4	25.6	26.2	25.4 L	25.6	0.80	1.4	0.4	25.6	0.90	1.6	0.5	12	XX
HYPZTU	23.6	23.7	24.2 L	23.8	23.8	-1.18	1.4	0.2	23.8	-0.96	1.5	0.7	12	LA
JR72UA_AL	27.4	26.8	25.8	25.8	26.5	1.70	1.6	0.8	26.5	1.77	1.7	0.8	12	AL
L3WPJT	24.5	24.4	24.5	25.6	24.8	-0.14	1.4	0.6	24.5	-0.23	1.4	0.6	12	LY
LCKKLU_AL	24.1	24.2	24.0	23.2	23.9	-1.13	1.5	0.5	24.2	-0.54	1.5	0.5	12	AL
LDEBQ9	23.8	22.8	24.4	23.8	23.7	-1.32	1.4	0.6	23.9	-0.86	1.4	0.5	11	LU
LTPTZW_AL	27.7 *	27.3 *	26.2	25.6	26.7	1.94 *	1.7	1.0	25.9	1.20	1.4	1.2	12	AL
LUJJ7B	25.8	25.1	26.3	25.1	25.6	0.70	1.4	0.6	25.8	1.04	1.5	0.5	12	LZ
N4Z446	24.8	25.0	24.7 L	24.9	24.8	-0.09	1.4	0.1	24.8	0.03	1.5	0.5	12	LA
PPF4NP	25.1	24.7	24.9	24.7	24.8	-0.07	1.9	0.2	24.9	0.21	2.0	0.3	12	LZ
PTBXJ7	24.7	24.9	24.9	24.9	24.9	-0.06	1.7	0.1 L	24.9	0.20	1.8	0.5	12	LH
QVYQWZ_AI	24.8	24.1	25.1	23.5	24.4	-0.57	1.6	0.7	24.3	-0.45	1.5	0.7	12	AL

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42L2

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
QWU9X2	25.7	23.7 H	25.8 H	25.3	25.1	0.23	2.2	0.9	26.0	1.30	2.2	1.9 H	12	LW
QXKB24_AL	24.8	25.7	24.5	25.2	25.1	0.16	1.4	0.5	24.4	-0.30	1.4	0.7	12	XX
R7YGFM	22.7	24.8	25.8	26.5	24.9	0.03	1.6	1.6 H	23.6	-1.17	1.4	1.3	12	LZ
R7YGFM_AL	39.5 XL	40.9 XL	45.4 XL	41.7 XL	41.8	18.45 X	0.0	2.5 H	40.4	15.90 X	0.0	1.8	12	AL
RGF3M3	25.5	25.9	25.6	25.9	25.7	0.88	1.5	0.2	25.2	0.43	1.6	0.8	12	LW
RMJ8C2_AL	24.4	24.3	25.1	25.0	24.7	-0.22	1.8	0.4	24.6	-0.09	1.7	0.6	12	AL
TKBC9N	24.0	24.6	24.2	24.8 H	24.4	-0.55	1.8	0.4	24.1	-0.65	1.4	0.5	12	LZ
TL63E3	26.9	26.8	26.8	27.5 *	27.0	2.27 *	1.5	0.4	26.7	1.98 *	1.6	0.5	12	LH
U2EBUW	26.1	26.0	25.3	24.8	25.5	0.67	1.8	0.6	24.5	-0.21	1.9	2.6 H	12	LZ
V2CZDK	25.4	24.8	25.0	25.5	25.2	0.27	1.6	0.3	24.8	0.08	1.6	0.7	12	LA
VC7EBV	23.5 L	26.0	24.5	23.8	24.4	-0.51	1.2	1.1	24.3	-0.45	1.4	0.7	12	LH
VKMRE2	27.1	24.6	26.8	25.5	26.0	1.20	1.7	1.2	25.0	0.23	1.6	1.0	12	LY
VUTW7H	23.4	23.7	23.7 L	22.8 L	23.4	-1.64	1.1	0.4	23.4	-1.34	1.1	0.4	4	TT
W94Z3W	26.9	26.5	26.0	26.3	26.4	1.66	1.4	0.4	25.8	1.07	1.6	0.8	12	LY
XGZUZU	23.7	23.2	23.4	24.0	23.6	-1.47	1.4	0.3	23.4	-1.33	1.6	0.6	12	LZ
XJ4QLJ	25.1	26.2 H	25.3	25.9	25.6	0.77	1.8	0.5	25.5	0.75	1.7	0.6	12	LH
XKWGRX	22.6 L	23.5	23.4	23.3	23.2	-1.84	1.2	0.4	23.7	-1.01	1.3	0.9	12	LU
XXJNRJ	22.8	22.8 *	23.4	24.1	23.3	-1.79	1.5	0.6	23.3	-1.48	1.5	0.6	4	LZ
XZQ7NU	24.6	25.6	23.9	24.1	24.5	-0.40	1.7	0.8	25.3	0.57	1.6	1.0	12	LA
YDB8JR	24.5	24.5	24.7	25.6	24.8	-0.09	1.5	0.5	24.8	0.05	1.5	0.6	12	LA
YFYGVD_AL	24.3	25.5	25.7	23.9	24.8	-0.08	1.4	0.9	24.9	0.22	1.6	0.9	12	AL
ZCV3KT_AL	24.4	39.2 XH	39.2 X	41.2 X	36.0	12.06 X	2.0	7.8 H	33.5	8.84 X	2.0	7.6 H	11	AL
ZJQBYT_AL	30.8 X	30.2 X	30.2 X	30.3 X	30.4	5.98 X	1.7	0.3	29.9	5.20 X	1.8	0.8	12	AL

Consensus (All Labs) Results

Wk Mean	25.02	24.86	25.03	24.86	Month Mean	24.91	Grand Mean	24.73
Avg SDr	1.59	1.51	1.69	1.62	Avg SD	1.61	Avg SD	1.58
SD btwn Labs	1.29	1.06	0.95	1.13	SD btwn Labs	0.92	SD btwn Labs	0.99
Labs Incld	54	52	50	50	SD btwn Wks	0.68	SD btwn Wks	0.93
Labs Excld	4	6	5	5	Labs Incld	52	Labs Incld	53
Labs not Rcvd	0	0	3	3				

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	BK	Buchel Strip Compression Tester BK-155
ID	IDM Compression Tester	LA	L&W Autoline (223 Enrollment)
LH	L&W 282	LU	L&W 52 without moisture correction(was 53)
LW	L&W 53 with moisture correction (was 53M)	LY	L&W 152 without moisture correction
LZ	L&W (model not specified)	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

Report #664
January 2025

	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
2XUN2B	33.6	33.6	33.4	33.9	33.6	-0.21	2.3	0.2	33.4	-0.02	2.4	0.4	12	LU
32N8ET	33.6	33.8	32.8	33.7	33.5	-0.34	2.3	0.4	34.3	0.68	2.2	0.7	12	LU
3HTC7C	33.2	32.4	33.6	32.0	32.8	-0.86	2.9	0.7	32.9	-0.53	2.8	0.6	8	XX
47CCMN	34.3	34.2	34.0	33.2	33.9	0.01	2.6	0.5	33.5	0.02	2.4	0.5	12	LU
69WFVL	33.5	34.3	34.2	34.5	34.1	0.19	2.6	0.4	34.2	0.64	2.6	0.4	12	LU
6AF6J8	32.9	34.9	34.2	32.0	33.5	-0.31	2.5	1.3	30.4	-2.63 *	2.3	2.4 H	12	XX
6T4QYN_AL	36.3	34.3 L	34.2	33.6	34.6	0.56	1.8	1.2	34.4	0.81	1.9	1.1	12	XX
7RMWTM_AI	36.8 L	38.0 *L	36.8 *L	36.4 L	37.0	2.43 *	0.0	0.7	39.4	5.05 X	0.0	4.6 H	12	AL
7WHN6Q	33.2	32.1	33.8	33.1	33.0	-0.67	2.2	0.7	33.2	-0.18	2.4	1.3	12	LA
7WX8PN	32.9	33.2	No Data	No Data	33.1	-0.67	2.5	0.2	32.4	-0.93	2.1	0.9	4	LH
7WX8PN_AL	32.3	30.6 *	No Data	No Data	31.5	-1.92	2.3	1.2	31.2	-1.92	1.8	1.4	4	AL
83JEN8	39.4 X	38.6 X	39.8 X	40.4 X	39.6	4.43 X	2.2	0.8	38.8	4.55 X	2.8	1.7	12	XX
8LFKH9	35.1 L	34.3 L	35.8 L	34.7 L	35.0	0.84	0.0	0.6	34.6	0.95	0.0	0.7	12	LH
9BVT74_AL	35.2	33.9	33.6	34.3	34.3	0.27	2.8	0.7	33.0	-0.39	2.8	1.6	8	XX
9HD7A9	36.5	35.2	35.3	34.8	35.5	1.22	2.5	0.7	35.2	1.50	2.5	0.9	12	LH
BPN8GG_AL	34.7	36.4	No Data	No Data	35.6	1.30	2.2	1.2	35.2	1.51	2.0	1.2	10	XX
BYETME	34.6	34.6	34.3	34.7	34.6	0.52	2.6	0.2	34.5	0.90	2.6	0.4	12	BK
C2VJ8F	30.2 *H	32.5 H	32.9 H	32.8 H	32.1	-1.43	4.0	1.2	31.7	-1.53	3.4	0.9	12	LH
CXXVVF	36.0	36.5	36.2 L	35.1	36.0	1.61	2.4	0.6	34.6	1.01	2.4	1.2	12	LA
EC7LNY	32.2	32.7	31.9 L	32.3	32.3	-1.28	1.8	0.3	32.2	-1.06	1.9	1.4	12	LY
EC7LNY_AL	32.9	31.8	32.7	31.6	32.3	-1.27	2.2	0.6	32.7	-0.63	2.1	0.6	12	AL
EPVKE2	34.2	34.5	35.7 L	34.9	34.8	0.73	2.1	0.6	34.5	0.90	2.2	0.8	12	LA
F47NCF	16.6 XL	16.4 XL	16.3 XL	16.1 XL	16.4	-13.76 X	0.7	0.2	16.4	-14.62 X	0.9	0.3 L	8	XX
FVE9PW	33.6	33.2	34.3	32.6	33.4	-0.36	2.0	0.7	33.7	0.17	2.2	0.8	12	XX
HYPZTU	33.1	31.1	32.1	34.3	32.6	-0.98	2.2	1.4	33.0	-0.36	2.5	1.1	12	LA
JR72UA_AL	35.8	36.4	36.3	36.2	36.2	1.77	2.5	0.2	35.5	1.70	2.6	1.2	12	AL
L3WPJT	33.8	32.8	33.9	33.2	33.4	-0.37	2.4	0.5	33.4	-0.07	2.3	0.5	12	LZ
LCKKLU_AL	34.2	34.7	33.3	32.1 L	33.6	-0.25	2.4	1.1	33.0	-0.42	2.3	1.1	12	AL
LDEBQ9	31.2	31.8	33.8	31.8	32.1	-1.38	2.3	1.1	31.4	-1.75	1.8	0.9	12	LU
LTPTZW_AL	37.7 *	37.2 *	35.9	34.8	36.4	1.97 *	2.3	1.3	34.9	1.21	2.2	1.5	12	AL
LUJJ7B	33.3	34.0	35.2	34.0	34.1	0.15	2.5	0.8	34.7	1.09	2.4	0.8	12	XX
N4Z446	33.2	34.2	34.0	32.2	33.4	-0.41	2.6	0.9	33.1	-0.30	2.2	0.8	12	LW
PPF4NP	33.6	33.8	33.6	33.4	33.6	-0.24	2.6	0.2	33.2	-0.24	2.6	0.4	12	LZ
PTBXJ7	32.8	33.8	34.4	33.7	33.7	-0.17	2.8	0.6	33.2	-0.26	2.8	0.8	12	LZ
QVYQWZ_AI	33.6	33.8	31.6 *L	33.5	33.1	-0.61	1.7	1.0	32.9	-0.47	2.2	1.7	12	AL

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 52 lb Linerboard - 52J2

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
QWU9X2	35.3	34.4	33.7	34.1	34.4	0.36	2.8	0.6	35.4	1.63	2.6	1.8	11	LW
QXKB24_AL	31.6	34.9	32.9	35.7	33.8	-0.11	2.1	1.8	33.2	-0.25	2.1	1.5	12	XX
R7YGFM	33.0	32.5	36.5	34.2	34.0	0.11	2.2	1.8	32.5	-0.80	2.3	1.6	12	LZ
R7YGFM_AL	44.2 XL	44.0 XL	42.6 XL	42.3 XL	43.3	7.34 X	0.0	1.0	42.7	7.93 X	0.0	1.1	12	XX
RGF3M3	34.3	34.7	34.5	34.5	34.5	0.46	2.5	0.1 L	33.4	-0.02	2.4	1.1	12	LW
RMJ8C2_AL	34.1	33.3	34.9	34.1	34.1	0.16	2.5	0.6	34.2	0.62	2.4	0.8	12	AL
TKBC9N	33.3	33.1	35.2	32.8 L	33.6	-0.24	2.3	1.1	33.0	-0.40	2.5	1.0	12	LZ
TL63E3	34.4	35.6	35.4 L	36.7 *	35.5	1.27	2.0	1.0	33.4	-0.06	2.0	2.3	12	LH
U2EBUW	34.2	34.1	35.1	34.8 H	34.6	0.53	3.0	0.5	33.6	0.13	2.9	2.6 H	12	LZ
V2CZDK	33.7	34.3	33.9	35.6	34.4	0.36	2.0	0.8	34.8	1.15	2.5	1.0	12	LA
VC7EBV	33.1	34.3	33.8	33.6 L	33.7	-0.15	2.1	0.5	33.2	-0.23	2.2	0.7	12	LH
VKMRE2	29.0 XH	31.0 H	33.9	34.6	32.1	-1.39	3.4	2.6 H	33.4	-0.10	2.7	1.7	12	LZ
VUTW7H	31.2 L	31.7	31.2 *L	31.8 L	31.5	-1.90	1.7	0.3	31.5	-1.70	1.7	0.3 L	4	XX
W94Z3W	36.1	34.9	36.1	35.0	35.5	1.26	2.5	0.7	34.8	1.16	2.4	1.1	12	LU
XGZUZU	32.2	33.0	33.4	31.2	32.4	-1.14	2.1	1.0	31.5	-1.69	2.1	1.0	12	LZ
XJ4QLJ	35.1	34.5	34.4	34.3	34.6	0.53	2.5	0.4	34.8	1.11	2.3	0.6	12	LH
XKWGRX	33.5	35.6	33.1	31.7 H	33.5	-0.34	2.3	1.6	33.1	-0.27	2.3	1.1	11	LU
XXJNRJ	32.7	31.4	33.1	31.7	32.2	-1.30	2.2	0.8	32.2	-1.05	2.2	0.8	4	LZ
XZQ7NU	37.4 *	35.6 L	36.2	36.1	36.3	1.90	2.2	0.8	34.8	1.12	2.6	1.6	12	LA
YDB8JR	32.7	33.0	34.6	34.6	33.7	-0.14	2.4	1.0	33.8	0.30	2.2	0.8	12	LA
YFYGVD_AL	33.8	33.9	34.4	33.2	33.8	-0.07	2.4	0.5	33.4	-0.06	2.3	1.4	12	AL
ZCV3KT_AL	34.0	40.8 XH	42.2 X	41.7 X	39.7	4.54 X	2.8	3.8 H	38.6	4.43 X	3.3	3.2 H	12	AL
ZJQBYT_AL	41.0 XH	41.6 X	41.9 X	40.8 X	41.3	5.80 X	2.8	0.5	41.1	6.51 X	3.1	0.6	12	AL

Consensus (All Labs) Results

Wk Mean	33.89	33.89	34.20	33.80	Month Mean	33.90	Grand Mean	33.46
Avg SDr	2.43	2.49	2.37	2.31	Avg SD	2.42	Avg SD	2.37
SD btwn Labs	1.53	1.56	1.29	1.38	SD btwn Labs	1.28	SD btwn Labs	1.17
Labs Incld	53	53	50	50	SD btwn Wks	0.94	SD btwn Wks	1.19
Labs Excld	5	5	5	5	Labs Incld	53	Labs Incld	52
Labs not Rcvd	0	0	3	3				

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	BK	Buchel Strip Compression Tester BK-155
LA	L&W Autoline (224 Enrollment)	LH	L&W 282
LU	L&W 52 without moisture correction (was 53)	LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 with moisture correction	LZ	L&W (model not specified)
XX	Instrument make/model not specified by lab		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
47CCMN	290.7	1.00	16.34		292.0	1.19	7.49	4	EV
7RMWTM_AL	4.1	-4.57 X	0.17	L	13.8	-4.74 X	16.92	3	XX
7WX8PN_AL	229.4	-0.19	22.29		240.4	0.09	15.03	3	AL
BPN8GG_AL	153.4	-1.67	17.49		157.9	-1.67	11.58	4	AL
CXXVVF	314.9	1.47	34.06		292.8	1.20	17.92	4	LA
EC7LNY	249.3	0.20	15.09		243.7	0.16	5.15 L	4	XX
EC7LNY_AL	255.0	0.31	36.49		253.3	0.36	12.18	4	AL
EPVKE2	259.6	0.40	18.46		262.9	0.56	16.03	4	LA
HYPZTU	291.4	1.01	12.80		289.6	1.13	2.66 L	4	LA
JR72UA_AL	286.6	0.92	58.08	H	140.5	-2.04 *	161.84 H	4	AL
L3WPJT	265.7	0.51	36.24		263.6	0.58	17.52	4	LS
LCKKLU_AL	157.7	-1.59	19.34		226.6	-0.21	46.58	4	AL
LDEBQ9	196.3	-0.84	26.09		186.5	-1.06	9.14	4	EV
LTPTZW_AL	261.6	0.43	16.55		263.2	0.57	3.60 L	4	AL
N4Z446	249.2	0.19	34.96		265.7	0.62	14.51	4	LA
PPF4NP	235.8	-0.07	15.98		230.1	-0.13	4.98 L	4	LS
PTBXJ7	243.8	0.09	14.91		240.0	0.08	4.74 L	4	LS
QVYQWZ_AL	213.9	-0.49	28.24		232.3	-0.09	40.10	4	AL
QWU9X2	268.3	0.57	23.19		205.7	-0.65	67.95	4	XX
R7YGFM	181.8	-1.12	24.22		185.0	-1.09	2.88 L	3	LA
R7YGFM_AL	164.5	-1.46	29.16		172.4	-1.36	9.91	4	AL
RMJ8C2	250.6	0.22	30.92		234.7	-0.03	11.40	4	LS
RMJ8C2_AL	253.8	0.28	41.49		255.0	0.40	0.93 L	4	AL
V2CZDK	291.8	1.02	41.11		287.3	1.08	5.10 L	4	LA
VKMRE2	295.9	1.10	35.78		278.4	0.90	12.63	4	EV
VUTW7H	263.5	0.47	15.42		263.5	0.58	0.00	1	XX
X3G8RW	313.8	1.45	25.48		308.0	1.52	16.85	4	LS
XGZUZU	277.6	0.75	18.03		279.1	0.91	7.02	4	EV
XJ4QLJ	270.1	0.60	24.90		267.8	0.67	6.06	4	EV
XKWGRX	154.5	-1.65	18.46		222.8	-0.29	45.83	4	EV
XZQ7NU	212.5	-0.52	18.54		229.5	-0.15	26.55	4	LA
YFYGVD_AL	259.6	0.40	34.09		249.4	0.28	10.98	4	AL
ZCV3KT_AL	126.9	-2.18 *	16.48		131.5	-2.23 *	3.72 L	4	AL
ZJQBYT_AL	155.8	-1.62	24.90		149.0	-1.86	9.04	4	AL

Consensus (All Labs) Results

Month Mean	239.26	Grand Mean	236.36
Avg SD	27.52	Avg SD Months	35.46
SD btwn Labs	51.40	SD btwn Labs	46.96
Labs Incld	33	Labs Incld	33

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2XUN2B	386.9	0.18	6.89		388.8	0.34	2.84	3	XX
6T4QYN_AL	379.6	-0.25	10.94	H	381.8	-0.10	3.09	3	AL
7RMWTM_AL	85.8	-17.20 X	2.86		87.1	-18.58 X	2.99	3	XX
7WHN6Q	382.4	-0.08	6.64		384.2	0.05	4.24	3	XX
7WX8PN_AL	370.5	-0.77	5.93		370.2	-0.83	0.42	2	AL
9BVT74	393.8	0.57	4.76		394.9	0.72	0.98	3	PP
BPN8GG_AL	373.8	-0.58	5.27		374.1	-0.58	0.29 L	3	XX
EC7LNY_AL	397.1	0.76	5.84		397.1	0.86	2.60	3	AL
JR72UA_AL	402.6	1.08	2.41	L	394.5	0.70	8.89 H	3	AL
L3WPJT	404.6	1.20	8.43		397.1	0.86	10.27 H	3	XX
LCKKLU_AL	364.9	-1.09	3.25		367.2	-1.02	1.97	3	AL
QXKB24_AL	376.4	-0.43	4.30		378.2	-0.32	1.65	3	XX
R7YGFM_AL	373.4	-0.60	8.90		371.9	-0.72	1.40	3	AL
RMJ8C2_AL	421.2	2.16 *	5.92		417.9	2.16 *	3.40	3	AL
WY3ANF	354.6	-1.69	3.50		351.5	-2.00 *	3.93	3	TS
YFYGVD_AL	376.0	-0.45	3.50		381.0	-0.15	4.54	3	AL

Consensus (All Labs) Results

Month Mean	383.85	Grand Mean	383.36
Avg SD	6.19	Avg SD Months	4.35
SD btwn Labs	17.33	SD btwn Labs	15.95
Labs Incld	15	Labs Incld	15

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2XUN2B	183.2	1.44	7.59		178.5	1.55	12.06	4	HY
32N8ET	150.8	-0.16	8.17		160.4	0.57	9.98	4	HZ
47CCMN	146.0	-0.39	5.70		148.8	-0.06	10.94	4	TM
6T4QYN	163.1	0.45	3.16		158.3	0.45	6.63	4	LZ
7WHN6Q	111.8	-2.07 *	2.86		114.3	-1.93 *	6.30	4	SC
9BVT74	168.4	0.71	5.50		165.0	0.82	10.42	4	HY
C2VJ8F	155.4	0.07	20.77		157.3	0.40	13.22	4	HY
C9T4EH	141.8	-0.60	31.12	H	142.4	-0.41	2.25	4	TM
EC7LNY	155.6	0.08	6.66		137.6	-0.67	12.55	4	TM
LCKKLU	132.8	-1.04	6.22		132.0	-0.97	8.36	4	TM
LDEBQ9	131.4	-1.11	6.88		127.2	-1.23	12.08	4	TM
N4Z446	194.2	1.98 *	12.46		183.8	1.83	10.17	4	HY
QXKB24	162.6	0.42	9.71		158.9	0.48	3.19	4	HY
VKMRE2	173.0	0.94	5.00		157.8	0.42	17.63	4	HZ
X3G8RW	163.6	0.47	4.04		158.5	0.46	5.01	4	HY
XJ4QLJ	161.2	0.36	6.53		160.5	0.57	6.93	4	TM
XKWGRX	122.0	-1.57	11.73		118.4	-1.71	7.35	4	TM
YDB8JR	146.6	-0.36	6.60		144.7	-0.29	3.62	4	TM
ZCV3KT	161.8	0.39	11.84		144.8	-0.28	13.52	4	TM

Consensus (All Labs) Results

Month Mean	153.97	Grand Mean	149.93
Avg SD	11.22	Avg SD Months	9.89
SD btwn Labs	20.34	SD btwn Labs	18.44
Labs Incld	19	Labs Incld	19

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	149.74	18.48	4.22	14
Modified Scott Bond Mechanics	180.17	15.76	26.21	3

Key to Instrument Codes Reported by Participants

HY Huygen Digitized Scott Internal Bond Tester

HZ Huygen Internal Bond Tester with AccuPress

LZ L&W (model not specified)

SC Scott Internal Bond Tester (Manual)

TM TMI Monitor/Internal Bond Tester

	Monthly Results				Cumulative Results			
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months
2XUN2B	30.9	1.41	4.93		29.0	0.40	1.54	4
47CCMN	25.8	-0.38	2.39		27.1	-0.34	3.61	4
6T4QYN	20.2	-2.33 *	1.30		23.9	-1.50	2.79	4
7RMWTM	24.1	-0.97	0.74		24.3	-1.34	0.67	4
7WHN6Q	23.6	-1.15	3.85		24.2	-1.41	2.67	4
7WM63P	25.4	-0.52	1.95		27.1	-0.32	2.22	4
8LFKH9	21.0	-2.05 *	0.71		22.4	-2.04 *	3.45	4
9BVT74	28.4	0.52	1.52		28.5	0.20	0.38 L	4
C2VJ8F	22.6	-1.49	1.67		24.9	-1.13	3.04	4
EC7LNY	25.6	-0.45	3.36		27.6	-0.12	1.47	4
FTQYDA	27.6	0.24	1.67		27.8	-0.06	0.78	4
JR72UA	41.0	4.90 X	1.00		34.3	2.34 *	4.58	4
L3WPJT	27.2	0.11	4.10		30.3	0.86	4.09	4
LCKKLU	32.6	1.98 *	1.52		30.8	1.05	1.81	4
LDEBQ9	28.2	0.45	1.30		30.8	1.03	2.72	4
N4Z446	29.6	0.94	2.95		30.5	0.94	0.66	4
PPF4NP	27.8	0.31	0.45 L		27.7	-0.12	0.19 L	4
PTBXJ7	22.0	-1.70	0.71		22.1	-2.17 *	1.06	4
QVYQWZ	27.8	0.31	6.18 H		25.2	-1.02	1.88	4
QWU9X2	26.8	-0.03	2.95		30.7	1.01	2.78	4
QXKB24	28.8	0.66	3.27		27.7	-0.10	1.16	4
RMJ8C2	28.8	0.66	2.77		27.7	-0.12	2.21	4
V2CZDK	30.0	1.08	2.74		28.5	0.19	1.95	4
VKMRE2	29.9	1.04	5.13		28.5	0.20	3.56	4
X3G8RW	27.4	0.18	1.14		29.0	0.38	1.61	4
XGZUZU	28.1	0.43	3.10		29.2	0.45	2.78	4
XJ4QLJ	29.0	0.73	3.94		30.0	0.77	0.85	4
XKWGRX	25.0	-0.66	2.24		28.0	-0.01	4.10	4
YFYGVD	27.4	0.18	1.98		29.1	0.42	2.27	4
YLLA6R	28.0	0.38	1.58		28.2	0.09	0.85	4
YMZWFE	25.8	-0.38	3.77		31.0	1.13	3.96	4
ZCV3KT	29.7	0.97	3.86		30.8	1.05	0.99	4
ZJQBYT	25.5	-0.49	2.85		26.1	-0.70	1.69	4

Consensus (All Labs) Results

Month Mean	26.90	Grand Mean	27.96
Avg SD	2.93	Avg SD Months	2.44
SD btwn Labs	2.88	SD btwn Labs	2.71
Labs Incld	32	Labs Incld	33

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2R2PMF	32.8	0.17	0.82	L	33.9	0.93	1.16	4	XX
2XUN2B	30.9	-1.14	2.95		32.4	-0.53	2.96	4	TP
47CCMN	34.8	1.62	2.65		34.0	0.99	1.29	4	GA
6P4F4N	30.7	-1.33	1.43		33.2	0.26	1.83	4	LP
6T4QYN_AL	35.3	2.00 *	2.56		34.3	1.28	1.74	4	AL
7RMWTM_AL	33.1	0.43	1.36		31.3	-1.58	1.32	4	XX
7WM63P_AL	31.1	-0.97	2.24		33.2	0.28	1.49	4	AL
7WX8PN_AL	33.6	0.74	2.50		34.1	1.17	0.55	3	AL
9BVT74	34.3	1.25	5.10	H	35.1	2.06 *	2.37	4	TP
BPN8GG_AL	33.1	0.40	2.21		33.5	0.56	1.49	4	XX
CXXVVF	32.7	0.15	2.56		33.3	0.32	0.94	4	LA
DM9PBG	31.8	-0.49	2.13		32.3	-0.64	0.70	4	LP
EC7LNY	32.5	-0.02	1.87		33.2	0.20	1.53	4	LP
EC7LNY_AL	35.1	1.86	1.83		35.6	2.63 *	1.33	4	AL
EPVKE2	32.6	0.05	2.22		33.2	0.20	1.83	4	LA
F47NCF	32.1	-0.29	0.88	L	32.5	-0.42	0.54	4	XX
FTQYDA	34.3	1.27	3.44		31.1	-1.83	2.80	4	TD
GRW98V	32.0	-0.37	3.20		31.5	-1.42	0.70	2	GG
HYPZTU	31.6	-0.63	1.67		32.2	-0.73	0.49	4	LA
JR72UA_AL	33.9	1.01	1.41		33.8	0.85	0.61	4	AL
L3WPJT	33.1	0.40	1.58		33.4	0.44	2.54	4	GA
LCKKLU_AL	32.3	-0.13	2.59		33.2	0.21	0.74	4	AL
LDEBQ9_AL	32.3	-0.17	1.30		33.3	0.29	1.25	4	AL
LTPTZW_AL	34.3	1.28	1.83		33.6	0.63	1.57	4	AL
N4Z446	32.6	0.06	2.99		32.0	-0.91	0.83	4	LP
PPF4NP	33.0	0.35	1.83		33.2	0.26	0.39	4	LP
PTBXJ7	29.4	-2.21 *	2.56		29.6	-3.32 X	0.85	4	TD
QVYQWZ_AL	31.3	-0.89	2.55		32.0	-0.95	0.92	4	AL
QWU9X2	30.7	-1.31	2.62		31.4	-1.53	0.95	4	LP
QXKB24	34.0	1.09	4.83	H	33.4	0.40	0.52	4	TP
QXKB24_AL	32.2	-0.24	2.24		32.1	-0.83	0.48	4	XX
R7YGFM_AL	32.3	-0.18	1.90		34.2	1.18	3.05 H	4	XX
RMJ8C2_AL	33.0	0.34	1.38		32.8	-0.20	0.29	4	AL
TL63E3	29.0	-2.50 *	1.89		33.0	0.07	2.79	4	XX
V2CZDK	30.8	-1.20	2.06		31.0	-1.93 *	0.82	4	LA
VKMRE2	33.4	0.60	2.37		33.5	0.55	1.14	4	LP
X3G8RW	30.8	-1.23	2.85		32.5	-0.41	2.00	4	LP
XJ4QLJ	31.7	-0.56	1.83		32.3	-0.59	2.17	4	LP
XKWGRX_AL	32.8	0.19	2.30		33.2	0.27	0.93	4	AL

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42L

TAPPI Official Test Method T460

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
XZQ7NU	33.2	0.51	2.33	32.5	-0.49	1.18	4	LA
YFYGVD_AL	32.5	0.01	3.15	31.8	-1.17	0.82	4	AL
ZCV3KT_AL	32.6	0.08	1.23	33.1	0.15	0.76	4	AL
ZJQBYT_AL	37.2	3.30 X	2.09	37.7	4.62 X	0.88	4	AL

Consensus (All Labs) Results

Month Mean	32.51	Grand Mean	32.95
Avg SD	2.42	Avg SD Months	1.51
SD btwn Labs	1.40	SD btwn Labs	1.02
Labs Incld	42	Labs Incld	41

Key to Instrument Codes Reported by Participants

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

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2XUN2B	59.1	58.4	57.3	58.5	58.3	0.04	4.1	0.7	58.1	0.01	4.1	1.7	16	LC
32N8ET	56.8	56.6	56.8	56.6	56.7	-0.61	3.2	0.1 L	56.1	-0.72	3.0	1.0	16	LD
47CCMN	54.7	55.0	53.6	55.4	54.7	-1.38	3.3	0.8	55.8	-0.85	3.8	1.3	16	LD
69WFVL	56.3 H	58.5	56.7	56.6	57.0	-0.47	5.0	1.0	59.6	0.59	4.4	2.1	16	LD
6AF6J8	52.4 *L	52.2 *L	52.2 *L	52.1 *L	52.2	-2.33 *	0.7	0.2 L	54.0	-1.55	2.1	3.9	16	TU
6P4F4N	57.2 L	59.3 L	57.5 L	58.6	58.1	-0.04	1.5	1.0	59.2	0.43	2.7	2.0	16	LD
6T4QYN	58.2	55.6	59.4	56.4 H	57.4	-0.34	4.9	1.7	53.6	-1.67	3.7	2.7	16	LD
8LFKH9	59.6	62.8	58.8	60.9	60.5	0.88	3.2	1.8	60.6	0.99	3.3	1.6	16	LD
9BVT74	54.0	56.8	57.1	54.9 L	55.7	-0.99	3.3	1.5	55.0	-1.17	3.4	1.4	15	LD
9HD7A9	58.5	58.3	56.3	56.3	57.3	-0.35	3.0	1.2	56.9	-0.44	3.1	1.5	16	EM
AFGCJH	55.8	58.3	60.2	60.8	58.8	0.21	4.0	2.2	59.2	0.43	4.1	1.7	16	LD
BYETME	58.9	58.9	59.0	57.1	58.5	0.09	3.1	0.9	58.7	0.25	3.5	1.2	14	LZ
CW46P2	50.9 *	51.9 *	54.5	55.3	53.1	-1.98 *	4.1	2.1	50.2	-2.99 X	3.9	3.2	16	TH
CXXVVF	59.1	57.9	56.2	59.7	58.2	0.00	4.1	1.5	60.6	0.99	4.8	3.2	16	TU
D9NBTF	62.1	61.3	58.6	58.7	60.2	0.76	4.2	1.8	59.7	0.63	4.4	2.1	16	LD
DM9PBG	57.7	57.9	56.6	59.5	57.9	-0.12	3.2	1.2	58.0	-0.02	3.2	1.4	16	LD
EC7LNY	52.9	53.1	53.5	53.1	53.1	-1.98 *	3.4	0.3 L	51.9	-2.32 *	4.1	1.6	16	LD
FJ4XWZ	57.4 L	57.4 L	57.7 L	57.6 L	57.5	-0.28	0.7	0.1 L	57.6	-0.17	0.7	0.1 L	16	LD
FTQYDA	57.4	56.7	54.7	56.0	56.2	-0.80	3.6	1.2	55.9	-0.83	4.6	2.0	16	LZ
FVE9PW	60.7 L	58.8 L	61.6 L	62.9 L	61.0	1.07	1.3	1.7	60.7	1.01	1.1	1.6	16	XX
JZHDTR	59.5	60.5	58.9	58.2	59.3	0.41	3.3	1.0	58.3	0.09	3.5	1.2	16	LD
L3WPJT	59.7	58.2	57.6	58.9	58.6	0.15	2.9	0.9	58.9	0.34	3.5	2.1	16	LZ
LCKKLU	56.7	57.6	52.2 *	56.7	55.8	-0.95	4.0	2.4	55.1	-1.12	3.4	1.7	16	LD
N4Z446	57.8 H	57.0	60.3 H	59.9	58.7	0.20	5.7	1.6	60.2	0.82	4.8	2.8	16	XX
NK84C8	63.0	63.8	63.2 *	62.8	63.2	1.92	3.4	0.4	62.1	1.55	3.2	1.1	16	TB
PPF4NP	57.7	57.9	58.0	58.3	58.0	-0.10	2.0	0.3 L	57.8	-0.09	2.0	0.4 L	16	LD
PV6L6L	64.5 *H	64.2 *	64.0 *	63.8 *	64.1	2.29 *	5.0	0.3	61.6	1.37	4.3	2.8	16	LD
QVYQWZ	57.1	57.2	55.7	53.9	56.0	-0.88	4.5	1.5	55.2	-1.07	4.0	1.9	16	LZ
QWU9X2	58.4	58.8	58.3	61.5	59.3	0.39	4.3	1.5	60.5	0.92	4.0	3.6	12	LD
QXKB24	58.4	59.2	60.1	60.6	59.6	0.51	3.0	1.0	57.3	-0.28	3.3	1.8	16	LD
R48H2N	71.1 X	68.9 X	68.9 X	68.3 XH	69.3	4.29 X	5.6	1.2	67.2	3.48 X	5.3	2.1	16	TX
R7YGFM	59.5	55.4	60.3	59.5	58.7	0.17	3.7	2.2	56.1	-0.75	3.4	2.4	16	LD
RPB9F4	6.4 XL	6.6 X	6.5 X	6.4 X	6.5	-20.07 X	1.7	0.1 L	22.4	-13.52 X	3.8	20.0 H	7	TC
TL63E3	55.3	57.8	56.0	58.3	56.8	-0.54	2.6	1.4	56.2	-0.70	2.9	1.2	10	LD
U2EBUW	58.6	59.7	61.0	63.8 *	60.8	0.98	3.9	2.2	58.6	0.21	4.0	4.9	13	LD

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
V2CZDK	59.1	55.7 H	56.8	53.4 H	56.2	-0.78	6.7	2.4	56.8	-0.46	5.7	2.4	16	MB
VC7EBV	60.7	57.3	58.3	59.0	58.8	0.22	3.8	1.5	60.1	0.80	4.6	1.8	16	LD
VKMRE2	57.2	62.6	No Data	59.3 H	59.7	0.58	5.0	2.7	58.1	0.04	4.3	2.3	15	LZ
W94Z3W	64.2 *	60.1	56.6	59.2	60.0	0.69	4.5	3.2	60.5	0.95	4.5	2.7	16	LD
X3DQTX	62.4	63.4	62.0	61.7	62.4	1.60	3.1	0.7	63.1	1.91	3.4	1.2	16	LC
X3G8RW	No Data	No Data	No Data	56.3	56.3	-0.77	1.7	0.0	52.1	-2.23 *	2.0	12.0 H	5	LD
X7UAFD	57.1	57.9	56.9	57.9	57.4	-0.31	1.8	0.5	57.8	-0.09	1.7	0.6 L	16	MB
XGZUZU	56.3	56.8	57.6	56.0	56.7	-0.60	3.3	0.7	55.5	-0.95	3.3	1.6	16	EN
XKWGRX	60.7	No Data	59.3	70.5 X	63.5	2.04 *	3.9	6.1 H	60.0	0.75	3.8	3.5	14	LC
YDB8JR	60.7	66.0 *	57.7	62.8	61.8	1.38	3.5	3.5	62.6	1.75	3.6	2.4	16	LC
YMZWFE	60.5	57.3	57.5	58.6	58.5	0.10	4.0	1.5	58.5	0.18	4.0	1.5	4	TX
ZN89XG	60.0	60.3	55.6	56.5	58.1	-0.06	4.8	2.4	59.3	0.48	6.4	2.8	16	LD

Consensus (All Labs) Results

Wk Mean	58.29	58.38	57.71	58.26	Month Mean	58.24	Grand Mean	58.03
Avg SDr	3.82	3.70	3.69	3.72	Avg SD	3.72	Avg SD	3.75
SD btwn Labs	2.87	2.98	2.61	2.85	SD btwn Labs	2.58	SD btwn Labs	2.63
Labs Incld	44	43	43	44	SD btwn Wks	1.83	SD btwn Wks	2.81
Labs Excld	2	2	2	3	Labs Incld	45	Labs Incld	44
Labs not Rcvd	1	2	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	TC	TMI Monitor/Compression Tester, 17-37
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
TX	TMI Crush Tester (model not specified)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 250

Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T843

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2XUN2B	68.5	70.1	70.4	68.4	69.4	0.84	3.1	1.0	68.5	0.71	3.2	1.5	16	LC
69WFVL	63.7 H	61.8	62.6	63.8	63.0	-1.25	4.8	1.0	65.4	-0.61	3.9	2.0	16	LD
6P4F4N	69.4 L	69.0 L	69.1 L	69.0 L	69.1	0.75	1.2	0.2 L	69.8	1.29	2.2	1.2	16	LD
6T4QYN	65.4	65.1	67.6	69.2	66.8	0.01	3.0	2.0	65.5	-0.56	3.7	2.1	16	LD
9BVT74	71.5	68.3	68.1	69.7	69.4	0.85	3.4	1.6	68.7	0.82	3.5	1.6	15	LD
BYETME	64.5	65.4	63.0	68.2	65.3	-0.49	3.7	2.2	64.8	-0.87	3.7	2.0	14	LZ
DM9PBG	69.6	69.6	66.5	69.9	68.9	0.69	3.1	1.6	67.8	0.43	3.6	1.7	16	LD
EC7LNY	60.4 *H	59.4 H	59.6 *H	60.2 *H	59.9	-2.25 *	6.6	0.5	58.3	-3.67 X	5.6	1.8	16	LD
F47NCF	66.1 L	65.0 L	61.8	65.3	64.6	-0.73	2.1	1.9	65.3	-0.67	1.9	1.2	16	LZ
FVE9PW	71.9 L	70.9 L	70.7 L	70.0 L	70.9	1.34	1.1	0.8	70.6	1.64	1.1	1.2	16	XX
LCKKLU	66.2	68.2	67.0	68.8	67.6	0.25	2.8	1.2	67.3	0.22	3.8	2.0	16	LD
PPF4NP	66.5	67.8	67.0	67.3	67.2	0.12	2.2	0.5	67.2	0.16	2.1	0.5 L	16	LD
QVYQWZ	63.4	57.0 *H	62.4	63.5	61.5	-1.71	4.3	3.1	61.6	-2.24 *	4.5	3.1	16	LZ
QWU9X2	67.9	68.8	64.2	69.4	67.6	0.26	3.7	2.3	66.1	-0.33	3.9	2.6	12	LD
QXKB24	69.6	71.4	71.3	69.5	70.5	1.20	3.4	1.0	69.9	1.33	3.2	1.3	16	LD
R7YGFM	67.1	68.2	66.1	63.2	66.2	-0.21	3.5	2.1	64.5	-0.99	3.8	1.8	16	XX
X7UAFD	65.1	65.3	65.3	65.6	65.3	-0.47	1.8	0.2 L	65.5	-0.59	1.7	0.3 L	16	MB
XKWGRX	69.0 H	No Data	67.9	70.5	69.1	0.77	5.2	1.3	67.4	0.25	4.7	4.3 H	14	LC

Consensus (All Labs) Results

Wk Mean	66.99	66.54	66.15	67.30	Month Mean	66.78	Grand Mean	66.82
Avg SDr	3.80	3.54	3.03	3.64	Avg SD	3.54	Avg SD	3.36
SD btwn Labs	3.00	4.02	3.32	2.97	SD btwn Labs	3.06	SD btwn Labs	2.32
Labs Incld	18	17	18	18	SD btwn Wks	1.56	SD btwn Wks	2.01
Labs Excld	0	0	0	0	Labs Incld	18	Labs Incld	17
Labs not Rcvd	0	1	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

	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
2XUN2B	42.5	42.3	41.3	40.9	41.7	-0.29	3.0	0.8	42.3	-0.07	3.3	1.4	16	LC
32N8ET	42.7	42.4	42.7	42.4	42.5	0.06	2.4	0.2 L	43.0	0.36	2.7	0.9	16	LD
6AF6J8	43.7 L	43.9 L	44.4 L	43.9 L	44.0	0.71	1.0	0.3	40.3	-1.21	2.0	3.7	16	TU
6P4F4N	40.3 L	40.8 L	40.6 L	40.4	40.5	-0.84	1.3	0.2 L	41.2	-0.68	2.2	1.2	16	LD
6T4QYN	40.1	40.9	45.8	41.6	42.1	-0.13	3.6	2.6	42.1	-0.20	3.4	1.4	16	LD
8LFKH9	30.8 X	32.1 X	31.9 X	32.1 X	31.7	-4.79 X	3.1	0.6	32.7	-5.45 X	4.3	1.4	16	XX
9BVT74	37.2	42.2	40.8	41.7	40.5	-0.86	3.6	2.2	41.0	-0.79	3.8	1.6	16	LD
AFGCJH	41.3	38.9	42.2	39.3	40.4	-0.89	3.1	1.6	39.9	-1.42	3.2	1.4	16	LD
BH7V72	41.8	41.7 L	42.5	42.9	42.2	-0.09	2.9	0.6	41.5	-0.51	2.6	1.3	16	TH
D9NBTF	44.3	45.2	42.9	45.3	44.4	0.91	3.5	1.1	43.9	0.84	3.9	1.4	16	LD
DM9PBG	37.5	36.8 *	37.4 *	38.0 *	37.4	-2.23 *	2.9	0.5	39.4	-1.67	3.0	2.1	16	LD
FJ4XWZ	44.6 L	44.7 L	44.6 L	44.6 L	44.6	1.01	0.5	0.1 L	44.3	1.04	0.6	0.5 L	16	LD
JZHDTR	42.2	40.4	44.4	40.2	41.8	-0.28	2.5	1.9	42.0	-0.21	3.3	1.3	16	LD
L3WPJT	43.2	43.6	39.7	43.0	42.4	-0.01	3.4	1.8	46.0	2.03 *	3.4	7.4 H	16	LD
N4Z446	41.0	39.9	41.3	41.2	40.9	-0.69	2.9	0.7	41.4	-0.56	3.4	1.0	16	XX
NK84C8	40.5	41.2	41.0	41.7	41.1	-0.58	2.4	0.5	41.5	-0.53	2.2	1.1	16	XX
PV6L6L	46.8	43.3	43.8	46.3	45.0	1.19	3.3	1.8	44.8	1.34	3.7	2.0	16	EM
QXKB24	42.0	41.8	39.5	42.6	41.5	-0.42	2.1	1.3	41.2	-0.69	2.6	1.2	16	LD
R48H2N	45.6	47.4	45.7	45.6	46.0	1.64	3.4	0.9	44.5	1.17	3.9	2.1	16	LZ
R7YGFM	38.0	39.7	42.7	46.7	41.8	-0.28	3.6	3.8 H	40.4	-1.13	3.5	2.3	16	LD
RPB9F4	33.0 XH	30.2 XH	20.2 X	25.6 XH	27.2	-6.82 X	5.1	5.6 H	29.0	-7.58 X	5.6	4.8 H	7	TC
TL63E3	44.5	46.8	44.5	45.7	45.4	1.33	2.3	1.1	44.3	1.06	2.6	1.5	16	LD
U2EBUW	44.4	45.8	43.3	45.6	44.8	1.07	2.7	1.2	44.7	1.29	3.3	1.4	13	LZ
V2CZDK	43.0	46.5	44.9 H	42.1	44.1	0.78	4.1	2.0	43.8	0.77	3.9	1.4	16	MB
VC7EBV	36.6 *	38.0	37.3 *	39.2 H	37.8	-2.08 *	4.0	1.1	41.4	-0.56	3.5	2.6	16	LD
X3DQTX	39.2	43.2	43.2	43.4	42.2	-0.07	2.9	2.0	43.0	0.33	2.7	1.7	16	XX
X7UAFD	41.2	41.3	41.8	41.5	41.5	-0.41	1.7	0.3	40.7	-0.97	1.7	0.6 L	16	MB
ZN89XG	46.3	43.7 H	47.5 *	45.0 H	45.6	1.45	4.1	1.6	44.2	0.99	3.8	1.9	16	LD

Consensus (All Labs) Results

Wk Mean	41.94	42.39	42.53	42.72	Month Mean	42.39	Grand Mean	42.41
Avg SDr	3.02	2.85	2.86	3.11	Avg SD	2.96	Avg SD	3.12
SD btwn Labs	2.76	2.70	2.46	2.37	SD btwn Labs	2.23	SD btwn Labs	1.77
Labs Incld	26	26	26	26	SD btwn Wks	1.51	SD btwn Wks	2.19
Labs Excld	2	2	2	2	Labs Incld	26	Labs Incld	26
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants			
EM	Emerson 1200 Series	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	TC	TMI Monitor/Compression Tester, 17-37
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T826

	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
2XUN2B	14.1	13.5	13.5	13.6	13.7	0.07	1.1	0.3	13.6	-0.12	1.0	0.2	16	LU
32N8ET	14.0 H	13.9 H	14.2 H	14.1 H	14.1	1.15	1.9	0.2	14.4	1.32	1.5	0.6	16	XX
6AF6J8	13.1	13.9	13.5	13.4	13.5	-0.46	0.9	0.3	12.5	-1.85	1.2	1.0	16	XX
6T4QYN	12.9	13.8	13.4	13.5 L	13.4	-0.63	1.0	0.4	13.8	0.31	0.9	0.4	16	LA
8LFKH9	14.5 L	13.6 L	14.0 L	13.6 L	13.9	0.80	0.0	0.4	13.9	0.42	0.0	0.3	16	LH
9BVT74	13.4	12.5 *	13.3	13.0	13.0	-1.73	1.0	0.4	13.1	-0.96	1.0	0.3	16	LB
9HD7A9	15.2 *	14.5	13.8	14.3	14.5	2.25 *	1.2	0.6	14.4	1.25	1.2	0.5	16	LH
CW46P2	23.9 X	26.0 X	24.5 X	22.8 X	24.3	29.58 X	1.0	1.3 H	23.6	16.69 X	1.5	2.7 H	8	TS
CXXVVF	15.0	14.7	15.8 X	15.1 *	15.2	4.19 X	1.2	0.5	14.6	1.65	1.2	0.6	16	LA
EC7LNY	13.1	13.3	12.9	12.7	13.0	-1.82	1.3	0.2	13.0	-1.10	1.4	0.2 L	16	LB
EPVKE2	14.5 H	14.6	13.9	13.5	14.1	1.29	1.2	0.5	14.1	0.81	1.2	0.5	16	LA
FVE9PW	13.7	14.2	14.6 *	13.1	13.9	0.69	0.9	0.7	13.9	0.48	1.0	0.7	16	XX
HYPZTU	13.9	12.9 H	13.0	13.3	13.3	-1.05	1.4	0.4	13.3	-0.61	1.2	0.4	16	LA
L3WPJT	13.0	13.8	13.1	13.7	13.4	-0.65	0.9	0.4	13.2	-0.79	1.0	0.3	16	LB
LCKKLU	13.4	14.0	14.3	12.6	13.6	-0.18	1.1	0.7	13.7	0.18	1.1	0.5	16	LA
PPF4NP	13.6	13.9	13.7	13.8	13.7	0.30	1.1	0.1	13.7	0.08	1.1	0.2 L	16	LA
PV6L6L	13.4 L	14.6 L	13.7 L	12.9 L	13.6	-0.02	0.0	0.7	15.0	2.36 *	1.1	1.0	16	LH
R7YGFM	12.7	14.1	14.2	14.8 H	13.9	0.84	1.4	0.9	13.2	-0.73	1.1	0.8	16	LZ
RMJ8C2	14.1	13.7	13.2 H	14.2	13.8	0.46	1.2	0.4	13.7	0.19	1.3	0.5	16	LA
RPB9F4	25.5 XH	22.4 XH	23.3 X	23.6 XH	23.7	27.90 X	1.7	1.3 H	23.0	15.70 X	1.7	1.2	7	TS
TKBC9N	13.4	13.5	13.7 H	13.0	13.4	-0.70	1.4	0.3	13.2	-0.64	1.2	0.6	16	XX
U2EBUW	11.3 X	12.0 X	12.5 *	10.7 X	11.6	-5.65 X	1.1	0.8	12.6	-1.70	1.3	3.7 H	13	LZ
V2CZDK	14.2	13.8 L	13.7 L	14.3 L	14.0	0.93	0.8	0.3	14.0	0.58	1.2	0.5	16	LA
VC7EBV	13.5	13.7	13.4 L	13.4	13.5	-0.38	1.2	0.2	13.5	-0.21	1.1	0.2 L	16	XX
X3G8RW	No Data	No Data	No Data	13.3	13.3	-1.00	1.1	0.0	13.4	-0.47	0.8	0.1 L	4	LH
YDB8JR	12.7 L	12.8	13.5	14.5	13.4	-0.74	0.8	0.8	13.4	-0.39	1.0	0.5	16	XX
YMZWFE	14.1	13.9	13.4	14.0	13.9	0.60	1.2	0.3	13.6	-0.06	1.2	0.3	16	TT

Consensus (All Labs) Results

Wk Mean	13.71	13.79	13.59	13.64	Month Mean	13.64	Grand Mean	13.63
Avg SDr	1.14	1.12	1.22	1.21	Avg SD	1.17	Avg SD	1.16
SD btwn Labs	0.69	0.56	0.50	0.66	SD btwn Labs	0.36	SD btwn Labs	0.60
Labs Incld	23	23	23	24	SD btwn Wks	0.49	SD btwn Wks	0.90
Labs Excld	3	3	3	3	Labs Incld	23	Labs Incld	25
Labs not Rcvd	1	1	1	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)	TS	TMI Monitor/STFI Compression Tester, 17-33
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab

End of Report