Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #615 (N) - December 2020

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX14	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC13	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC13	Edgewise Compressive Strength by T839, Corrugated Board
205	42F3	Bursting Strength (Mullen), 42 lb Linerboard
207	35E2	Bursting Strength (Mullen), 35 lb Linerboard
215	42F3	Ring Crush, 42 lb Linerboard
217	35E2	Ring Crush, 35 lb Linerboard
223	42F3	STFI, 42 lb Linerboard
225	35E2	STFI, 35 lb Linerboard
228	42F	Roughness - Stylus Method, 42 lb Linerboard
229	42F3	Roughness - Sheffield Method, 42 lb Linerboard
231	42F	Internal Bond, 42 lb Linerboard
234	42F	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42F	Air Resistance, 42 lb Linerboard
240	CM11	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM11	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM11	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM11	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; 36 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 lb Corrugating Medium	CM11	January 2020-Current
35 lb Linerboard	35E2	June 2020-Current
	35E1	February 2020-April 2020
42 lb Linerboard	42F2	February 2020-Current
	42F1	January 2020-January 2020
56 lb Linerboard	56G1	January 2020-Current

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, 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 80 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
4BJ8AE	675.0	1.49	11.02		582.1	-0.20	87.11 H	4	LS
6XUUBA	564.0	-0.80	31.00		577.8	-0.30	17.88	4	ER
8QL2F6	614.0	0.23	24.20		595.2	0.11	15.58	4	LM
CHE2N6	639.8	0.76	36.95		644.1	1.25	9.63	4	ER
ECH8PU	569.0	-0.69	11.49		574.7	-0.38	17.33	4	XX
EDX87X	624.5	0.45	23.22		612.7	0.52	32.62	4	LO
EFWRM3	696.1	1.92 *	64.23		675.4	1.99 *	40.55	4	TB
ELTABU	588.0	-0.30	18.34		571.3	-0.46	15.65	4	LG
F6HW84	661.8	1.22	47.29		625.7	0.82	31.31	3	EX
FBK7EV	597.6	-0.11	44.09		560.6	-0.71	25.81	4	LS
FDRLL2	628.7	0.54	40.21		604.4	0.32	30.24	4	TE
JZQWHX	652.9	1.04	57.04		598.0	0.17	44.37	4	LM
KQZX6X	530.4	-1.49	27.87		526.7	-1.50	22.90	4	LS
KXLQHH	480.6	-2.52 *	10.21		481.9	-2.56 *	0.98 L	4	LL
LFXUFU	581.3	-0.44	40.02		553.7	-0.87	42.21	4	LS
LPJ2CX	625.9	0.48	16.94		621.5	0.72	34.22	4	LH
LT446P	572.0	-0.63	29.84		566.1	-0.58	16.99	4	ER
MY4RCV	556.1	-0.96	14.22		587.2	-0.08	60.67	3	LL
N97K4L	572.0	-0.63	21.68		570.0	-0.49	25.99	4	ES
QFWQRK	658.8	1.16	54.86		615.6	0.59	68.22	4	LL
QQHVYJ	616.8	0.29	84.82 H		592.4	0.04	72.24	4	EX
QXFM7R	616.4	0.28	45.04		664.7	1.74	35.83	4	LG
TEG9LJ	635.6	0.68	43.32		666.9	1.79	24.22	4	EM
UQBPBK	545.3	-1.18	30.62		574.0	-0.39	38.48	4	EX
VETHXG	598.1	-0.10	67.39		583.1	-0.18	26.53	4	ER
WQZW9E	617.9	0.31	40.47		554.9	-0.84	51.55	4	ET
YXVEYB	553.8	-1.01	15.75		568.6	-0.52	35.21	4	LG

Consensus (All Labs) Results

Month Mean	602.68	Grand Mean	590.71
Avg SD	39.92	Avg SD Months	39.43
SD btwn Labs	48.53	SD btwn Labs	42.56
Labs Incld	27	Labs Incld	27

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	633.22	37.29	30.53	8
Water based adhesive sealing	635.60	0.00	32.92	1
Clip sealing	588.36	48.96	14.32	17

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	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	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70
TE	Testometric M500 - 25 KN	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3KB7NE	49.4	1.09	2.01		45.1	0.44	4.66	4	XX
4H3D97	39.5	-1.13	0.53	L	40.3	-1.07	0.74	4	TF
ELTABU	45.2	0.15	2.01		43.0	-0.22	1.78	4	LE
FBK7EV	44.0	-0.11	1.98		41.6	-0.66	3.31	4	LD
JYZX4Y	40.0	-1.02	1.00		38.3	-1.73	2.33	4	WK
KQZX6X	34.4	-2.27 *	1.33		30.0	-4.35 X	6.50 H	4	EM
LFXUFU	46.0	0.34	1.28		44.6	0.29	2.50	4	LC
LPJ2CX	50.2	1.29	2.17		50.2	2.09 *	0.00	1	EM
QQHVYJ	45.0	0.11	1.65		43.8	0.04	1.20	4	LC
VETHXG	45.9	0.30	3.67	H	44.3	0.19	1.39	3	EN
VPEM6G	43.2	-0.30	2.06		41.4	-0.74	3.54	4	LD
WCJY4E	49.0	1.02	1.19		44.8	0.35	4.12	4	XX
YEG37K	46.9	0.54	1.40		46.9	1.01	0.51	4	LC

Consensus (All Labs) Results

Month Mean	44.51	Grand Mean	43.68
Avg SD	1.86	Avg SD Months	2.72
SD btwn Labs	4.46	SD btwn Labs	3.14
Labs Incld	13	Labs Incld	12

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LE	L&W Crush Tester 840	TF	TMI Digital Crush Tester, Model 17-19
WK	Zwick Z005 Crush Tester	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2BAHWH	47.9	0.62	0.58	L	46.9	0.79	1.18	3	TL
3KB7NE	49.4	1.17	1.20		45.1	-0.07	4.54 H	4	XX
3KQP9C	43.7	-0.88	1.06		43.5	-0.81	0.45	4	TK
4BJ8AE	51.3	1.87	1.34		50.1	2.27 *	1.75	4	TB
4H3D97	44.1	-0.74	0.88		45.1	-0.07	0.71	4	TD
4L4JNC	49.4	1.19	1.17		48.2	1.37	0.88	4	LD
64HEGB	46.0	-0.06	3.28	H	43.4	-0.84	3.31	4	TD
6XUUBA	44.9	-0.46	1.84		44.0	-0.58	2.63	4	LD
7HWZEA	44.4	-0.65	3.01	H	41.5	-1.72	4.00	4	XX
8QL2F6	48.6	0.89	2.93		48.1	1.32	0.84	4	EM
AYNAP2	47.4	0.45	0.77	L	46.8	0.70	0.58	4	EM
CHE2N6	44.4	-0.63	0.91		44.4	-0.37	0.45	4	EM
D98MGW	47.9	0.63	1.53		45.5	0.14	1.74	4	TD
EDX87X	42.7	-1.23	2.68		43.4	-0.86	0.65	4	LD
EFWRM3	47.0	0.32	0.55	L	47.9	1.21	3.29	4	LD
ELTABU	47.4	0.46	0.72	L	45.6	0.18	1.81	4	LY
F6HW84	45.7	-0.18	1.22		45.0	-0.11	1.48	3	CT
FBK7EV	41.8	-1.58	3.38	H	44.2	-0.47	2.00	4	LD
FDRLL2	44.1	-0.75	1.01		43.3	-0.89	1.14	4	LD
JYZX4Y	44.5	-0.59	2.10		43.3	-0.88	1.14	4	WK
JZQWHX	39.2	-2.51 *	1.41		39.9	-2.45 *	0.62	4	TG
KQZX6X	39.1	-2.53 *	1.11		41.3	-1.83	2.63	4	EM
KXLQHH	51.2	1.83	1.81		45.5	0.13	4.12	4	LC
LFXUFU	47.5	0.50	0.87		47.2	0.90	0.23 L	4	LC
LT446P	46.5	0.12	1.17		46.5	0.58	1.86	4	LD
MY4RCV	47.5	0.50	1.25		47.6	1.09	0.22 L	3	BU
N97K4L	47.8	0.62	1.50		47.7	1.13	1.03	4	LD
QQHVYJ	45.4	-0.25	1.11		44.3	-0.42	1.09	4	LC
QXFM7R	44.5	-0.60	1.09		46.2	0.44	1.40	4	EM
TEG9LJ	46.1	-0.03	3.94	H	45.7	0.20	1.79	4	TH
UA4TRL	43.5	-0.95	3.40	H	42.4	-1.32	2.41	4	LC
UQBPBK	47.0	0.32	1.27		44.7	-0.26	3.72	4	LD
V634MJ	47.5	0.48	0.92		47.8	1.19	0.71	4	TG
VETHXG	47.8	0.58	2.38		44.8	-0.20	2.08	4	EN
VPEM6G	48.0	0.66	1.17		43.2	-0.96	3.70	4	LD
WQZW9E	43.5	-0.96	1.23		44.4	-0.37	1.47	4	TD
YEG37K	47.8	0.59	2.21		47.0	0.81	0.55	4	LC
YRLHRF	48.7	0.94	2.91		45.5	0.14	4.50	2	XX
YXVEYB	48.5	0.84	0.93		47.2	0.91	0.87	4	TJ

Consensus (All Labs) Results

Month Mean	46.13	Grand Mean	45.24
Avg SD	1.87	Avg SD Months	2.18
SD btwn Labs	2.76	SD btwn Labs	2.16
Labs Incld	39	Labs Incld	39

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	TB	TMI Monitor/Compression Tester, Model 17-70
TD	TMI Digital Crush Tester, Model 17-09	TG	TMI Digital Crush Tester, 17-76
TH	TMI Monitor/Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TK	TLS Compression Tester, Model 5184	TL	Tech-Lab Systems Compression
WK	Zwick Z005 Crush Tester	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42F3

TAPPI Official Test Method T807

Report #615 (N)
December 2020

	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
2UL9AF	112.8	118.8 *	116.0	115.8	115.9	1.41	10.5	2.5	115.9	1.08	10.5	2.5	4	LA
3KB7NE	115.3 L	113.5 L	115.3 L	114.3 L	114.6	1.06	2.3	0.8	115.8	1.05	2.8	1.5	8	LC
4ARBN6	104.5	108.6	103.4	109.7	106.5	-1.15	7.8	3.1	105.6	-1.44	9.0	4.6	8	LA
4H3D97	105.6	115.6	110.2	109.1	110.1	-0.17	8.3	4.1	110.4	-0.26	9.9	2.9	8	XX
4L4JNC_AL	118.0	120.6 *	121.0 *	116.7	119.1	2.29 *	7.3	2.1	119.8	2.03 *	7.5	2.5	8	AK
6XUUBA	103.4	102.7 *	109.1	106.8	105.5	-1.44	6.7	3.0	108.2	-0.80	7.8	4.2	8	LZ
76CBP6	113.2	110.4	113.2	112.0	112.2	0.40	5.5	1.3	113.5	0.51	6.5	1.7	8	AH
796JP6	112.4	112.1	112.8	113.0	112.6	0.51	4.9	0.4 L	112.9	0.35	5.0	0.5 L	8	LA
79CLL6	107.0 L	105.3 L	103.0	105.0	105.1	-1.55	7.1	1.6	105.4	-1.49	9.1	1.5	8	LC
7BTVNB	116.0	114.7	116.2 H	105.7	113.1	0.66	11.2	5.0	113.1	0.42	11.2	5.0	4	LA
7D3WV3	107.7	108.4	115.3	129.2 X	115.2	1.21	10.6	10.0 H	115.3	0.93	9.2	7.5 H	8	TB
8GHVHW	101.7	107.5	107.1	106.7	105.8	-1.37	8.9	2.7	106.7	-1.17	8.8	2.2	8	LC
8YY2R8	108.5 L	107.9	110.3	109.2	109.0	-0.48	3.8	1.0	109.2	-0.55	3.9	0.7 L	8	LA
A6EJYY_AL	124.3 *	112.1 H	119.6	111.2	116.8	1.68	11.1	6.3	119.8	2.05 *	10.3	5.8	8	AK
AUUAB7	99.0 *H	108.2	109.7	106.9	106.0	-1.31	9.3	4.8	106.0	-1.34	9.3	4.8	4	XX
BJQGH6	103.5	111.3 H	109.8	110.1 H	108.7	-0.56	13.1	3.5	108.7	-0.67	11.5	2.5	8	LJ
BZY7WQ_AL	116.5	109.2	110.7	111.3	111.9	0.32	7.5	3.2	110.4	-0.26	7.4	2.7	8	AL
C2PUTR	114.7	116.2	115.6	112.3	114.7	1.09	9.2	1.7	113.9	0.59	9.5	2.7	7	TB
C6UDYZ_AL	114.4	115.4	116.5	115.5	115.4	1.29	8.8	0.9	112.5	0.25	8.4	3.2	8	AL
CHYH48	108.2	107.7 L	109.3	108.8 L	108.5	-0.61	3.8	0.7	108.8	-0.66	3.5	0.7 L	8	XX
D3H8Q4	110.5	109.6	110.3	108.9	109.8	-0.25	7.0	0.7	109.7	-0.44	7.1	1.0	8	AH
DQNQ23	104.1 L	110.7 L	110.8 L	111.2	109.2	-0.41	3.5	3.4	109.2	-0.55	4.1	2.4	8	LA
DTER8Q	115.5	105.9	109.3	111.8	110.6	-0.03	8.0	4.0	109.6	-0.45	8.4	3.2	8	LC
DTUBQN_AL	106.7	109.3	105.4	107.5	107.2	-0.96	9.5	1.6	109.6	-0.45	8.9	2.8	8	AL
ELTABU	117.0	115.2	117.4	116.1	116.4	1.56	6.8	1.0	116.2	1.16	6.8	0.9	8	AH
EVDF8Y	114.9	116.2 H	113.7	119.4	116.0	1.46	10.5	2.5	116.2	1.16	9.9	1.8	8	LA
F6HW84	104.5	113.5 H	105.0	103.0	106.5	-1.16	10.5	4.7	107.8	-0.90	9.9	4.7	8	XX
FBK7EV	106.7	110.3	106.1	104.7	106.9	-1.05	7.1	2.4	106.4	-1.22	9.2	2.8	8	LA
FYCEVW	114.0	114.7	104.5 H	111.7	111.2	0.14	10.0	4.7	114.0	0.61	9.6	4.2	8	AX
J4B2ZT_AL	111.1	114.9	111.9	110.5	112.1	0.38	6.7	1.9	112.3	0.21	6.6	1.9	8	AL
JN2ZJK_AL	121.6 *	126.2 X	121.4 *	122.4 *	122.9	3.34 X	6.5	2.2	120.1	2.11 *	7.1	4.4	8	AL
LFXUFU	109.3	112.7	106.9	113.5	110.6	-0.04	9.0	3.1	110.3	-0.29	8.4	2.3	8	AH
LT446P	118.2	109.9 L	112.4	106.3	111.7	0.27	7.9	5.0	116.4	1.20	9.4	6.5 H	8	AH
M3PAUF	55.7 XL	58.0 X	58.1 X	59.2 X	57.7	-14.56 X	3.8	1.5	79.1	-7.90 X	6.9	22.9 H	8	LA
MMPU8R	113.6	111.9	111.3	113.0	112.4	0.47	9.5	1.1	112.4	0.24	9.5	1.7	8	LC

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42F3

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
MNMVGP	101.7	112.3	107.1	113.3	108.6	-0.58	10.4	5.3	110.0	-0.36	9.3	4.1	8	LZ
N97K4L	105.8	108.4	111.9	109.9	109.0	-0.48	6.9	2.6	109.5	-0.48	7.6	2.1	8	LA
PAYH9M	113.3	110.3	No Data	No Data	111.8	0.29	9.9	2.1	111.4	-0.02	9.4	1.5	4	LC
PRV6CQ_AL	102.9	107.9	103.5	114.4	107.2	-0.97	6.9	5.3	107.4	-0.99	8.2	3.5	8	AL
Q4RB7P	110.8	110.6	110.9	110.8	110.8	0.01	4.4	0.1 L	110.6	-0.22	4.5	0.3 L	8	LJ
QC239R_AL	106.7	102.7 *	109.8	111.4	107.6	-0.85	7.9	3.8	108.1	-0.83	8.0	3.4	8	AL
QUH7VJ	106.7	103.9	107.5	110.1	107.0	-1.02	9.2	2.6	107.6	-0.95	9.4	2.5	8	LA
QW7HUP_AL	117.9	115.7	120.5 *	119.9 *	118.5	2.13 *	8.6	2.2	117.4	1.45	10.5	3.8	8	AL
RKBG2L	112.6	111.2	112.4	112.5	112.2	0.40	5.8	0.7	112.3	0.21	5.3	1.3	8	LA
RKBG2L_AL	109.9	115.9	111.6	113.0	112.6	0.51	6.1	2.5	112.3	0.21	5.8	2.3	8	AL
TM9NAN	108.0	109.2	110.1	110.7	109.5	-0.34	8.5	1.2	109.6	-0.46	7.9	1.2	8	TP
TQV7R9	102.6	110.4	110.4	103.4	106.7	-1.11	8.7	4.3	107.0	-1.08	9.8	3.0	8	AH
TQV7R9_AL	112.2	108.7	107.5	109.8	109.6	-0.32	7.4	2.0	111.2	-0.07	8.4	4.1	8	AL
U74GVL_AL	110.6	108.7	113.7	109.5	110.6	-0.04	7.6	2.2	111.1	-0.08	8.1	2.3	8	AL
UA4TRL_AL	112.5	No Data	115.1	114.9	114.2	0.94	10.6	1.4	114.4	0.73	10.1	1.3	7	AL
UJU6CF	111.3	112.1	110.9	113.0	111.8	0.30	7.3	0.9	113.6	0.53	8.3	2.4	8	LB
UKY2AN	108.6	115.5	108.7	114.4	111.8	0.29	9.5	3.6	111.6	0.02	9.6	2.9	8	LC
UKY2AN_AL	115.4	113.9	113.1 H	116.4	114.7	1.08	11.4	1.5	115.3	0.95	11.1	1.7	8	AL
UQBPBK	106.0 H	107.2	108.0	108.0	107.3	-0.94	10.3	0.9	107.3	-1.03	9.2	2.3	8	AH
VBTGMM	120.5	124.2 X	124.7 X	122.4 *	123.0	3.36 X	8.5	1.9	121.9	2.55 *	8.4	2.7	8	AX
VPEM6G	102.6	109.6	103.2	108.7	106.0	-1.30	6.2	3.6	106.2	-1.29	6.6	3.7	8	LA
YLEUEE	102.8	102.0 *	107.2	105.9	104.5	-1.72	7.2	2.5	104.0	-1.82	8.6	2.6	8	AC

Consensus (All Labs) Results

Wk Mean	110.28	110.89	110.99	111.34	Month Mean	110.73	Grand Mean	111.45
Avg SDr	8.68	7.88	8.17	8.36	Avg SD	8.34	Avg SD	8.44
SD btwn Labs	5.69	4.02	4.54	4.34	SD btwn Labs	3.64	SD btwn Labs	4.09
Labs Incld	56	53	54	54	SD btwn Wks	3.24	SD btwn Wks	3.14
Labs Excld	1	3	2	2	Labs Incld	54	Labs Incld	56
Labs not Rcvd	0	1	1	1				

Key to Instrument Codes Reported by Participants

AC	Perkins Model C	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 (205 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
2UL9AF	96.3	94.6 H	94.1	87.1	93.1	0.58	12.0	4.1	92.9	0.29	12.1	4.2	12	LA
4ARBN6	91.9	94.4	90.0	90.5	91.7	0.04	6.9	2.0	89.5	-0.89	7.6	2.3	12	LA
4H3D97	87.6	90.4	91.1	89.0	89.5	-0.83	9.3	1.6	89.9	-0.74	9.1	1.6	12	XX
4L4JNC_AL	101.6 *	98.3 *	101.5 *	100.2 *	100.4	3.52 X	6.0	1.5	99.0	2.43 *	7.2	2.2	12	AK
6XUUBA	89.3	90.6	89.5	84.9	88.6	-1.21	9.4	2.5	89.6	-0.87	8.1	2.4	12	LA
76CBP6	89.0	94.2	98.8	97.2	94.8	1.28	5.8	4.3	97.2	1.80	6.1	3.8	12	AH
796JP6	93.2 L	93.5	93.8 L	93.8	93.6	0.79	3.4	0.3 L	93.0	0.31	3.1	0.7 L	12	LA
79CLL6	87.8 L	85.7	90.4	82.0 *	86.5	-2.05 *	6.1	3.6	89.2	-1.00	7.7	4.8	12	LC
7BTVNB	89.8	93.5	88.4	84.5 H	89.0	-1.03	8.7	3.7	92.3	0.08	8.8	4.5	8	LA
7D3WV3	92.4	91.3 L	94.6	100.7 *	94.8	1.26	6.1	4.2	93.1	0.35	7.7	4.9	10	TB
8GHVHW	83.8 *	89.5	91.0	87.0	87.8	-1.51	8.8	3.1	89.8	-0.79	7.6	3.6	12	LA
8YY2R8	91.0 L	89.6 L	91.4	91.2 L	90.8	-0.32	3.4	0.8	91.3	-0.28	3.4	1.0	8	LA
A6EJYY_AL	100.9 *	104.4 X	103.1 *	99.2	101.9	4.11 X	8.9	2.3	97.6	1.92	8.5	5.9	12	AK
AUUAB7	89.7	92.3	87.7	87.1	89.2	-0.97	7.7	2.3	88.0	-1.40	7.4	2.4	12	XX
BJQGH6	94.1	92.6	94.9	93.1	93.7	0.83	9.2	1.1	91.8	-0.09	8.4	2.9	12	LJ
BZY7WQ_AL	93.2	91.9	91.3	96.0	93.1	0.60	6.3	2.1	92.8	0.28	5.7	1.7	12	XX
C2PUTR	96.4	101.4 X	97.4	95.5	97.7	2.43 *	8.5	2.6	96.1	1.41	8.2	2.8	11	TB
C6UDYZ_AL	114.1 X	118.4 X	117.8 X	118.8 X	117.3	10.26 X	9.5	2.1	101.5	3.28 X	8.5	17.1 H	8	AL
CHYH48	90.5 L	89.5 L	87.7	91.6 L	89.8	-0.71	3.1	1.7	88.1	-1.36	3.9	2.6	7	XX
D3H8Q4	91.3	90.4	90.7	93.2	91.4	-0.08	5.5	1.3	90.9	-0.39	6.4	1.0	12	AH
DQNQ23	90.7	89.7	91.2	90.1	90.4	-0.47	5.4	0.7	90.6	-0.50	4.7	1.0	12	LA
DTER8Q	94.0	90.6	87.5	90.8	90.7	-0.36	8.7	2.6	91.7	-0.11	8.7	2.5	12	LC
DTUBQN_AL	89.2	92.9	88.2	91.0	90.3	-0.51	9.4	2.1	90.4	-0.59	8.6	2.0	12	AL
ELTABU	92.8	95.7	94.8	94.7	94.5	1.16	6.2	1.2	96.5	1.55	6.8	2.5	12	AH
EVDF8Y	92.2	91.9	100.3 *	91.5	94.0	0.95	10.0	4.2	94.0	0.68	8.5	3.0	12	LA
F6HW84	90.5	90.5	83.5 *	86.5	87.8	-1.54	8.4	3.4	90.1	-0.69	9.1	4.2	8	XX
FBK7EV	87.3	87.7	90.8	88.2	88.5	-1.24	7.1	1.6	88.6	-1.19	7.7	2.8	12	LA
FYCEVW	95.0	90.6	95.0	93.1	93.4	0.72	8.6	2.1	93.4	0.47	8.6	2.1	4	AX
J4B2ZT_AL	94.0	93.3	92.6	94.6	93.6	0.80	5.6	0.8	92.2	0.04	5.0	1.5	12	AL
JN2ZJK_AL	91.1	93.0	91.6	92.1	91.9	0.14	5.3	0.8	93.2	0.41	7.0	2.9	8	AL
LFXUFU	92.6	97.1	92.1 H	90.8	93.2	0.62	9.1	2.7	92.2	0.06	7.8	4.7	12	AH
LT446P	97.1	82.8 *	89.6	87.6	89.3	-0.93	8.8	5.9 H	94.2	0.75	8.1	6.5 H	12	AH
M3PAUF	82.1 *	84.7 *	81.5 *	83.1 *	82.8	-3.50 X	7.8	1.4	84.3	-2.69 *	7.7	2.6	12	LA
MMPU8R	92.3	88.1	96.7	93.1	92.5	0.38	8.7	3.5	94.1	0.70	8.4	3.0	12	LC
MNMVGP	95.7	92.2	90.7	93.8	93.1	0.60	8.1	2.2	92.9	0.31	8.3	2.4	12	LZ

Containerboard Interlaboratory Testing Program

Analysis 207

Bursting Strength (Mullen), 35 lb Linerboard - 35E2

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
N97K4L	94.8	90.8	89.5	91.3	91.6	0.00	7.2	2.3	89.8	-0.77	7.2	2.5	12	LA
PAYH9M	91.6	88.5	No Data	No Data	90.1	-0.62	9.2	2.2	94.7	0.93	7.8	5.8	6	LC
PRV6CQ_AL	90.9	93.1	93.6	94.8	93.1	0.60	5.5	1.6	92.6	0.20	6.9	2.1	12	AL
Q4RB7P	91.0	90.5	90.7	90.4	90.6	-0.38	4.6	0.3 L	90.7	-0.48	4.8	0.2 L	12	LJ
QC239R_AL	94.0	89.3	92.9	86.2 H	90.6	-0.40	9.3	3.6	91.3	-0.27	8.6	2.2	11	AL
QUH7VJ	98.7 H	86.7	89.3	84.7	89.9	-0.70	17.5	6.2 H	90.9	-0.39	11.9	5.3	12	LA
QW7HUP_AL	100.4 *	94.8	99.8	97.4	98.1	2.60 *	6.9	2.6	98.5	2.24 *	7.6	3.7	11	AL
RKBG2L	92.7	92.2	88.2 L	91.0	91.0	-0.24	6.0	2.0	89.0	-1.07	6.3	2.9	12	LA
RKBG2L_AL	93.7 L	91.1 L	92.7	90.8	92.1	0.19	5.1	1.4	92.4	0.12	5.8	2.1	12	AL
TM9NAN	92.3	90.0	91.2	91.6	91.3	-0.13	6.9	1.0	90.9	-0.39	7.1	1.2	12	TP
TQV7R9	94.8	88.2	88.6	87.6	89.8	-0.72	7.9	3.4	91.7	-0.11	8.0	4.8	12	AH
TQV7R9_AL	90.0	95.5	93.0	86.2	91.2	-0.17	6.5	4.0	91.2	-0.29	7.4	2.6	12	AL
U74GVL_AL	90.8	97.7 *	89.2 H	92.9	92.6	0.41	8.4	3.7	92.9	0.28	7.3	2.6	12	AL
UA4TRL_AL	96.3	No Data	93.2	92.5	94.0	0.96	8.6	2.0	95.8	1.30	8.7	2.7	11	AL
UJU6CF	90.5	89.1	93.9	91.3	91.2	-0.17	7.0	2.0	93.7	0.56	7.5	2.6	12	LB
UKY2AN	95.9	92.0	93.5	97.0	94.6	1.20	8.5	2.3	92.0	-0.03	8.0	4.1	12	LC
UKY2AN_AL	95.1	92.2 H	95.2	91.9	93.6	0.80	8.9	1.8	93.7	0.57	8.1	2.5	12	AL
UQBPBK	85.6	86.8	85.6	90.4	87.1	-1.80	7.5	2.3	89.8	-0.80	8.5	3.3	12	AH
VBTGMM	97.3	94.4	94.3	92.7	94.7	1.23	9.8	1.9	95.1	1.04	10.0	3.7	12	AX
VPEM6G	92.5	91.6 L	85.3	87.6	89.3	-0.94	4.5	3.4	88.9	-1.11	5.8	2.5	12	LA
YLEUEE	87.6	87.6	88.4	91.8	88.9	-1.10	5.9	2.0	86.9	-1.78	5.9	2.9	12	AC

Consensus (All Labs) Results

Wk Mean	92.41	91.25	91.88	91.20	Month Mean	91.60	Grand Mean	92.06
Avg SDr	8.79	7.43	7.50	7.60	Avg SD	7.88	Avg SD	7.66
SD btwn Labs	3.88	3.16	4.24	4.16	SD btwn Labs	2.50	SD btwn Labs	2.87
Labs Incld	55	52	54	54	SD btwn Wks	2.75	SD btwn Wks	3.22
Labs Excld	1	3	1	1	Labs Incld	52	Labs Incld	55
Labs not Rcvd	0	1	1	1				

Key to Instrument Codes Reported by Participants

AC	Perkins Model C	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)
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
2UL9AF	101.3 *H	103.6 X	102.3 *	101.2 *	102.1	3.23 X	4.0	1.1	102.1	3.29 X	4.0	1.1	4	LD
3KQP9C	86.2 L	82.5 *	67.2 X	80.8 X	79.2	-4.19 X	1.6	8.3 H	83.8	-2.48 *	1.7	7.3 H	8	MB
4L4JNC	91.8	94.4	92.3	93.9	93.1	0.32	2.5	1.2	92.5	0.28	2.7	1.5	8	LD
6R3K2B	88.5	86.9	89.2	91.6	89.1	-0.99	2.9	2.0	87.1	-1.42	2.7	2.5	8	LD
6XUUBA	93.3	94.1	83.7 *	94.8	91.5	-0.21	3.2	5.2 H	91.9	0.08	3.2	3.5	8	LD
796JP6	92.2	92.9	92.4	92.3	92.5	0.11	2.3	0.3 L	92.7	0.34	2.3	0.4 L	8	LD
79CLL6	90.4	92.0	95.3	94.5	93.0	0.30	4.5	2.2	91.9	0.07	4.0	3.1	8	LD
7BTVNB	97.8	98.1	99.2	101.1 *	99.0	2.24 *	3.7	1.5	99.0	2.33 *	3.7	1.5	4	LD
7D3WV3	97.7	93.8	93.5	92.4	94.3	0.73	3.7	2.3	94.7	0.97	4.0	2.0	8	LX
8GHVHW	89.7	89.4	90.4	90.5	90.0	-0.69	2.2	0.5	90.5	-0.35	2.4	1.3	8	LD
8YY2R8	90.1	89.4	90.8	93.1	90.8	-0.41	2.7	1.6	90.4	-0.37	2.8	1.2	8	TU
AB346Z	90.0 L	90.0 L	90.8	90.9	90.4	-0.54	1.4	0.5	91.0	-0.21	1.3	0.7	8	RS
AE7TT3	88.1	89.2	88.0	89.2	88.6	-1.13	3.0	0.7	88.3	-1.06	2.7	0.8	8	LD
AYNAP2	93.1	91.6	93.3	92.1	92.5	0.13	2.6	0.8	92.8	0.38	2.7	1.0	8	EM
BZY7WQ	97.9	97.6 H	101.0 *	99.1	98.9	2.21 *	4.4	1.5	97.8	1.93 *	3.9	2.3	8	LZ
C2PUTR	90.3	87.6	92.3	91.8	90.5	-0.52	3.1	2.1	92.1	0.14	3.1	2.7	8	LD
C6UDYZ	103.7 X	103.0 XH	103.3 *	101.8 *H	103.0	3.51 X	5.5	0.8	102.8	3.52 X	4.6	0.7	8	LC
C9UNVZ	88.3 H	91.1 H	87.3	91.5	89.6	-0.82	5.0	2.1	86.2	-1.70	7.2	5.2 H	8	TU
CHYH48	91.6	83.1 *	82.2 *H	80.2 X	84.3	-2.54 *	4.0	5.0 H	81.9	-3.05 X	3.8	4.4	8	LD
DQNQ23	95.2	95.5	96.4	94.6	95.4	1.06	2.0	0.8	93.4	0.55	2.0	2.3	8	LZ
DTER8Q	89.6	86.8	87.7	87.1	87.8	-1.40	2.6	1.2	88.1	-1.12	2.4	1.7	8	LD
DTUBQN	91.8	91.6	91.0	91.3	91.4	-0.23	3.0	0.3 L	92.1	0.16	2.7	0.9	8	LD
EKRLK4	82.8 *H	95.4	96.3	81.6 XH	89.0	-1.00	5.0	7.9 H	92.6	0.32	4.1	6.5 H	8	MB
ELTABU	94.1	94.5	93.1	92.4 L	93.5	0.46	2.3	0.9	91.9	0.09	2.9	1.9	8	LG
EVDF8Y	96.1	96.1	96.3	94.7	95.8	1.19	2.7	0.7	95.6	1.24	4.3	1.6	8	LZ
FBK7EV	92.9	91.8	92.8	93.0	92.6	0.17	2.3	0.6	91.2	-0.14	2.4	1.6	8	LD
FDRLL2	93.6	94.4	94.1	93.4	93.9	0.57	1.9	0.5	93.0	0.45	2.0	1.2	8	LD
FYCEVW	80.1 X	78.9 X	70.2 X	71.1 X	75.1	-5.52 X	3.0	5.2 H	76.2	-4.86 X	3.1	3.7	8	LC
GAJT7U	92.9	92.0	90.3	89.0	91.1	-0.34	3.3	1.8	91.1	-0.18	3.3	1.8	4	TH
J3YAZY	76.7 X	74.1 X	72.6 X	75.7 X	74.8	-5.61 X	2.8	1.8	74.0	-5.55 X	3.2	1.7	8	EM
JN2ZJK	89.4	90.1 H	89.2 H	91.3 H	90.0	-0.68	5.7	0.9	90.6	-0.34	4.6	1.0	8	LC
LCAHFN	91.4	92.5	94.2	92.6	92.7	0.18	2.3	1.2	88.9	-0.87	3.3	4.3	8	LZ
LFXUFU	93.9	93.6 L	92.8	92.3	93.2	0.34	2.1	0.7	93.1	0.47	2.6	0.7	8	LC
LT446P	88.0	87.3	88.3	89.8	88.4	-1.22	3.3	1.1	87.6	-1.28	3.0	1.2	8	LD
MMPU8R	93.8 L	95.5	94.4	94.8	94.6	0.82	3.0	0.7	93.4	0.55	2.7	1.7	8	LD

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42F3

TAPPI Official Test Method T822

Report #615 (N)
December 2020

	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
MN42UU	99.6 *	98.0	99.5	98.4	98.9	2.19 *	3.0	0.8	98.7	2.22 *	2.6	1.2	8	EX
MNMVGP	91.5	90.3	91.8	89.6	90.8	-0.42	3.0	1.0	88.8	-0.90	3.2	2.3	8	LC
NKGYZT	92.4	91.1	96.2	95.8	93.9	0.57	3.2	2.5	93.0	0.45	2.4	1.9	8	LZ
PAYH9M	105.8XL	89.3	97.4	101.2 *	98.4	2.05 *	3.7	7.0 H	98.8	2.25 *	3.5	5.0 H	7	MB
Q4RB7P	91.2	91.3	91.4	91.6	91.4	-0.24	2.9	0.2 L	91.4	-0.07	2.6	0.2 L	8	LD
QC239R	93.7	92.4	93.2	93.0	93.1	0.31	2.5	0.5	92.3	0.20	2.7	1.0	8	LD
QP8TDK	92.9	92.0	90.3	88.9	91.0	-0.35	3.3	1.8	91.0	-0.18	3.3	1.8	4	TH
QUH7VJ	90.3	87.1	87.9 H	94.2	89.9	-0.73	3.7	3.2	89.5	-0.67	3.6	2.5	8	LD
RKBG2L	87.7	88.9	86.4	90.0	88.3	-1.25	2.7	1.6	88.5	-0.97	2.7	1.4	8	LD
TM9NAN	92.0	92.1	89.0	91.4 H	91.2	-0.31	4.1	1.5	91.2	-0.12	4.0	1.2	8	TJ
UA4TRL	93.7	93.9	93.3	94.2	93.8	0.54	3.1	0.4 L	91.8	0.05	3.3	2.5	8	LC
UJU6CF	94.9	93.7	91.8	94.0	93.6	0.48	2.2	1.3	93.8	0.68	2.4	1.8	8	LC
UKY2AN	90.1	89.6	90.6	90.1	90.1	-0.65	2.6	0.4	89.9	-0.55	2.8	0.6 L	8	LD
V634MJ	96.8	95.9	98.1 L	95.1	96.5	1.42	2.3	1.3	95.6	1.26	2.4	1.3	8	TH
VBTGMM	90.9	91.6	92.7	91.5	91.7	-0.13	3.7	0.8	90.7	-0.30	4.1	1.5	8	LD
VETHXG	85.6	89.2	89.1	91.1	88.7	-1.10	2.1	2.3	86.8	-1.50	3.0	2.8	8	EN
VPEM6G	90.6	89.6	88.2	88.8	89.3	-0.91	2.4	1.0	88.5	-0.98	2.5	1.1	8	LD
YEG37K	91.3	88.9	89.9	89.3	89.8	-0.74	2.5	1.0	89.3	-0.73	2.6	0.9	8	LC
ZK3EKD	93.7	90.9	92.7	91.8	92.3	0.06	3.1	1.2	91.9	0.09	3.2	0.9	8	LD
ZLFYF9	97.0	93.2	95.4	96.3	95.5	1.09	2.3	1.7	94.6	0.92	2.6	1.6	8	LC

Consensus (All Labs) Results

Wk Mean	92.15	91.57	92.47	93.08	Month Mean	92.11	Grand Mean	91.62
Avg SDr	3.27	3.18	3.11	3.11	Avg SD	3.14	Avg SD	3.17
SD btwn Labs	3.56	3.38	4.31	3.43	SD btwn Labs	3.09	SD btwn Labs	3.18
Labs Incld	51	51	52	50	SD btwn Wks	2.24	SD btwn Wks	2.45
Labs Excld	4	4	3	5	Labs Incld	50	Labs Incld	50
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	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	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2UL9AF	93.0 X	93.5 X	93.1 *	92.2 X	93.0	3.63 X	4.0	0.5	91.8	4.02 X	3.7	1.2	12	LD
3KQP9C	77.8 L	77.8	77.8 L	77.8 L	77.8	-1.40	1.6	0.0 L	77.0	-1.56	1.5	0.6 L	12	MB
4L4JNC	82.4	83.9	80.8	83.2	82.6	0.19	2.9	1.3	82.5	0.53	2.8	2.0	12	LD
6R3K2B	79.1	78.6	81.2	81.1	80.0	-0.67	2.9	1.3	77.1	-1.51	4.1	3.1	12	LD
6XUUBA	81.7	82.1	93.4 *	81.6	84.7	0.89	3.6	5.8 H	83.9	1.03	3.2	3.4	12	LD
796JP6	82.3	82.7	84.0	83.1	83.0	0.34	2.7	0.7	82.4	0.50	2.6	0.7 L	12	LD
79CLL6	79.0	87.6	88.5	84.4 H	84.9	0.95	4.2	4.3	83.9	1.04	4.4	2.9	12	LD
7BTVNB	87.6 *	90.2 *H	90.2	85.4	88.3	2.10 *	5.0	2.3	85.3	1.57	4.5	3.7	8	LC
7D3WV3	86.0	78.4	85.2	85.8	83.8	0.61	3.7	3.6	82.0	0.33	4.4	3.5	11	LX
8GHVHW	81.6	81.4	81.4	81.4	81.4	-0.19	2.5	0.1 L	82.4	0.47	3.1	1.1	12	LD
8YY2R8	82.2	81.8	80.4	81.1	81.4	-0.21	2.7	0.8	78.2	-1.11	2.0	3.5	8	TU
AB346Z	79.1 L	79.5 L	79.8 L	80.1 L	79.6	-0.79	1.0	0.4 L	79.4	-0.62	1.1	0.7 L	12	RS
AE7TT3	77.2	78.5	77.1	80.1	78.2	-1.26	2.7	1.4	77.8	-1.23	2.6	0.9	12	LD
AYNAP2	81.8	81.8	80.4	81.8	81.5	-0.18	3.3	0.7	81.3	0.07	3.3	1.0	12	EM
BZY7WQ	85.2	85.5	89.6	88.9 *	87.3	1.75	3.8	2.3	83.5	0.91	4.4	3.8	12	LZ
C2PUTR	79.0	75.6	79.8	82.0 H	79.1	-0.96	6.6	2.7	80.7	-0.15	5.7	2.4	10	LC
C6UDYZ	145.4XH	144.3 X	146.7 X	145.9 X	145.6	21.08 X	5.0	1.0	103.0	8.22 X	5.8	31.5 H	12	LC
C9UNVZ	82.7	81.0 H	80.4	83.4	81.9	-0.04	5.1	1.4	78.0	-1.15	5.6	3.8	12	TU
CHYH48	79.1	74.6 *	75.2	68.6 X	74.4	-2.53 *	4.2	4.3	71.4	-3.65 X	3.8	5.3	8	LD
DQNQ23	84.1	82.6	84.3	83.0	83.5	0.49	2.2	0.8	81.1	-0.01	2.4	1.9	12	LZ
DTER8Q	78.0	77.8	77.2	76.2 *	77.3	-1.56	4.0	0.8	76.9	-1.58	3.7	0.9	12	LD
DTUBQN	83.0	82.0	81.2	81.4	81.9	-0.04	2.7	0.8	79.4	-0.63	3.2	2.8	12	LD
EKRLK4	72.4 XH	86.5 H	84.5	72.1 XH	78.8	-1.05	6.3	7.7 H	79.8	-0.50	5.8	6.6 H	12	MB
ELTABU	85.6	85.9	84.1	86.1	85.4	1.12	3.5	0.9	82.7	0.62	3.5	2.9	12	LG
EVDF8Y	86.2	87.5	88.2	87.1	87.3	1.75	3.6	0.8	86.3	1.94 *	3.4	1.1	12	LZ
FBK7EV	81.1	81.7	81.0	82.1	81.5	-0.18	3.2	0.5	80.2	-0.34	3.3	1.3	12	LD
FDRLL2	83.3	82.0 L	83.2	84.3	83.2	0.40	2.2	0.9	82.7	0.59	2.5	0.7	12	LD
FYCEVW	66.7 X	66.8 X	62.4 X	62.2 X	64.5	-5.80 X	3.6	2.6	64.5	-6.23 X	3.6	2.6	4	LC
GAJT7U	81.1	80.2	81.3	78.5	80.3	-0.58	3.7	1.3	81.7	0.24	4.2	1.9	8	TH
J3YAZY	68.0 X	67.9 X	66.9 X	67.8 X	67.7	-4.76 X	4.4	0.5	66.4	-5.52 X	4.5	1.9	12	EM
JN2ZJK	84.4	85.5	86.2	88.3	86.1	1.36	3.6	1.6	80.5	-0.22	3.4	6.3 H	8	LC
LCAHFN	82.6	82.7	83.6	83.8	83.2	0.39	3.3	0.6	81.5	0.17	3.0	2.4	12	LZ
LFXUFU	82.5	83.9	85.8	85.8	84.5	0.82	3.9	1.6	84.1	1.12	3.2	1.5	12	LC
LT446P	77.4	77.1	78.4	81.0	78.5	-1.17	2.6	1.8	77.3	-1.42	2.8	1.9	12	LD
MMPU8R	85.2	86.0	83.6	81.1	84.0	0.65	4.1	2.2	83.2	0.79	3.7	2.0	12	LD

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 35 lb Linerboard - 35E2

TAPPI Official Test Method T822

Report #615 (N)
December 2020

	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
MN42UU	85.5	84.1	86.1	85.3	85.2	1.07	3.2	0.8	85.3	1.58	3.9	1.7	12	EX
MNMVGP	79.7	80.0	81.3	74.7 *	78.9	-1.03	3.5	2.9	77.8	-1.25	3.4	2.5	12	LC
NKGYZT	80.6 L	82.9	85.5	81.7	82.7	0.22	4.2	2.1	78.3	-1.07	3.7	4.0	12	LZ
PAYH9M	98.7 XL	78.2	86.9	86.5	87.6	1.85	4.2	8.4 H	87.5	2.42 *	3.6	6.6 H	11	MB
Q4RB7P	82.4	82.4	82.4	82.6	82.5	0.15	2.5	0.1 L	82.5	0.52	2.8	0.3 L	12	LD
QC239R	79.8	81.8	83.3	84.0	82.2	0.08	3.0	1.9	82.6	0.57	3.3	1.8	11	LD
QP8TDK	81.1	80.2	81.3	78.5	80.3	-0.58	3.7	1.3	79.0	-0.81	3.2	1.9	8	XX
QUH7VJ	80.2	77.8	75.6	81.9	78.9	-1.04	3.8	2.8	78.9	-0.81	3.7	2.5	12	LD
RKBG2L	77.8	79.7	76.4 L	77.3	77.8	-1.39	3.6	1.4	77.6	-1.30	3.2	1.1	12	LD
TM9NAN	82.0	79.5	78.5	79.0	79.7	-0.75	3.3	1.5	79.9	-0.46	4.3	1.4	12	TJ
UA4TRL	84.3	81.4	79.8	81.1 H	81.7	-0.12	4.9	1.9	80.5	-0.24	4.5	2.1	12	LC
UJU6CF	85.3	88.0	82.8	85.6	85.4	1.13	4.0	2.1	84.6	1.32	3.8	1.6	12	LC
UKY2AN	79.4	81.3	72.8 *H	77.4	77.7	-1.42	5.9	3.7	80.3	-0.29	4.5	2.9	12	LD
V634MJ	82.9	83.1	83.0	83.7	83.2	0.39	3.1	0.4 L	83.8	1.01	3.3	1.8	12	TH
VBTGMM	80.6	82.7	84.2	83.7	82.8	0.26	4.3	1.6	81.9	0.30	4.2	1.7	12	LD
VETHXG	80.6	81.4	81.2	80.9	81.0	-0.33	2.9	0.4 L	77.8	-1.24	3.2	2.8	12	EN
VPEM6G	79.3	80.0	76.4	87.6	80.9	-0.38	3.3	4.8	80.0	-0.41	2.9	2.9	12	LD
YEG37K	79.1	79.0	83.1	80.1	80.3	-0.56	3.4	1.9	79.5	-0.60	3.1	1.3	12	LC
ZK3EKD	85.9 H	85.5	85.7	85.2	85.6	1.18	5.7	0.3 L	84.5	1.28	5.4	1.7	12	LD
ZLFYF9	80.7	83.1	83.7	84.1	82.9	0.30	3.2	1.5	80.0	-0.41	3.6	2.6	12	LC

Consensus (All Labs) Results

Wk Mean	81.74	81.85	82.51	82.46	Month Mean	82.01	Grand Mean	81.10
Avg SDr	3.48	3.67	3.79	3.78	Avg SD	3.75	Avg SD	3.66
SD btwn Labs	2.66	3.27	4.30	3.15	SD btwn Labs	3.02	SD btwn Labs	2.66
Labs Incld	49	51	52	49	SD btwn Wks	2.60	SD btwn Wks	2.72
Labs Excld	6	4	3	6	Labs Incld	51	Labs Incld	50
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	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	TJ	TLS Compression Tester, Model CDM-5
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
3KB7NE	24.7	24.1	23.4	25.1	24.3	0.58	1.6	0.7	24.0	0.40	1.6	0.7	8	LA
4ARBN6	25.3	23.1	24.3 H	26.4 *H	24.8	1.00	2.4	1.4	24.2	0.69	2.1	1.3	8	LH
4L4JNC_AL	23.9	24.6	23.3	23.7	23.9	0.16	1.5	0.5	24.1	0.59	1.5	0.5	8	AK
6R3K2B	23.1	23.5	23.2	25.1	23.7	0.00	1.7	0.9	23.7	0.11	1.7	0.9	4	LH
6XUUBA	22.8	23.4	23.1	22.7	23.0	-0.65	1.9	0.3	23.1	-0.49	1.7	0.4	8	LY
76CBP6	26.8 X	26.0 *	25.4 *	26.1	26.1	2.18 *	2.0	0.6	25.7	2.23 *	2.0	0.7	8	LU
796JP6	23.4	23.5	23.3	23.3	23.4	-0.29	1.9	0.1 L	23.4	-0.27	1.9	0.1 L	8	LA
79CLL6	24.6	26.1 *	28.9 X	24.6	26.0	2.16 *	2.0	2.0 H	24.9	1.47	1.9	1.8	8	LA
7HWZEA	24.9	25.1	25.7 *	24.9	25.2	1.36	1.7	0.4	24.5	0.96	2.1	1.0	8	XX
8GHVHW	22.9	22.8	23.1	23.2	23.0	-0.63	1.8	0.2	23.1	-0.52	1.5	0.3	8	LA
A6EJYY_AL	24.3	24.9 H	24.7	25.6	24.8	1.05	2.0	0.6	24.3	0.80	1.8	0.7	8	AK
BJQGH6	23.9	25.9 *	27.7 X	25.8	25.8	1.97 *	2.1	1.6	25.7	2.31 *	2.1	1.3	8	LH
BZY7WQ_AL	22.1	21.8	23.0 L	22.5 L	22.3	-1.27	1.4	0.5	23.3	-0.32	1.5	1.6	8	AL
C2PUTR	23.6	23.9	22.1	24.3	23.5	-0.22	1.8	1.0	23.9	0.34	2.0	0.9	8	LW
C6UDYZ_AL	23.5	23.6	23.4	23.6 L	23.5	-0.16	1.5	0.1 L	25.2	1.69	1.4	1.7	8	AL
C9UNVZ	24.7	24.1	24.1	24.5	24.3	0.59	2.0	0.3	24.2	0.67	1.9	0.5	8	LA
D3H8Q4	23.2	23.2	23.5	23.5	23.4	-0.32	1.3	0.1 L	23.3	-0.28	1.3	0.3	8	TT
DTER8Q_AL	22.9	23.0	23.1	22.6	22.9	-0.75	1.4	0.2	22.9	-0.77	1.5	0.2	8	AK
DTUBQN_AL	22.7	23.2	22.6	23.2	22.9	-0.72	1.7	0.3	23.0	-0.67	1.6	0.6	8	AL
EKRLK4	22.0	23.6	23.9	23.8	23.3	-0.34	2.0	0.9	23.6	0.01	1.9	0.7	8	LA
ELTABU	23.5	23.6	22.9	22.6	23.1	-0.53	1.5	0.5	23.1	-0.59	1.6	0.4	8	LU
EVDF8Y	23.8	23.3	22.7	22.3	23.0	-0.61	1.7	0.6	22.8	-0.91	1.7	0.6	8	LW
FBK7EV	22.4	22.8	22.6	23.0	22.7	-0.92	1.6	0.3	22.7	-0.93	1.5	0.3	8	LZ
FDRLL2	23.3	23.3	23.2	23.5	23.3	-0.36	1.9	0.1 L	23.1	-0.59	2.0	0.3	8	LY
FYCEVW	22.6	24.8	23.1	21.8	23.1	-0.56	1.9	1.3	23.0	-0.67	1.8	0.9	8	LZ
GAJT7U	23.2	22.9 L	22.5	23.2 H	22.9	-0.69	1.9	0.3	22.9	-0.70	1.9	0.3	4	LH
J4B2ZT_AL	22.3 H	24.1	23.4	22.7	23.1	-0.52	2.1	0.8	23.1	-0.59	2.0	0.7	8	AL
J6LQHK	23.5	23.0	22.9	23.6	23.2	-0.42	1.9	0.4	23.0	-0.67	1.8	0.6	8	LY
JN2ZJK_AL	21.6 L	20.4 X	20.9 *L	21.2 *L	21.0	-2.45 *	1.2	0.5	21.9	-1.86	1.5	1.0	8	AL
LCAHFN	24.3	23.7	24.2	22.7	23.7	0.01	1.4	0.7	23.2	-0.46	1.5	0.8	8	LA
LFXUFU	23.1	22.6	23.1	23.0	23.0	-0.69	1.7	0.2	22.9	-0.76	1.7	0.3	8	LU
LT446P	24.4	23.4	22.9	23.2	23.4	-0.24	1.8	0.7	23.0	-0.66	2.0	0.7	8	LU
M3PAUF	44.2 XH	44.4 XH	44.4 XH	45.6 XH	44.7	19.33 X	19.6	0.6	44.4	22.61 X	19.4	0.7	8	LH
MMPU8R	22.9	22.2	22.7	21.7	22.4	-1.23	1.7	0.5	22.5	-1.22	1.6	0.4	8	LA
MN42UU	31.4 XL	29.8 XL	30.0 XL	30.6 XL	30.5	6.23 X	0.0	0.7	30.8	7.79 X	0.0	0.9	8	TT

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F3

TAPPI Official Test Method T826

Report #615 (N)
December 2020

	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
MNMVGP	24.0	23.9	23.8	25.1	24.2	0.46	1.7	0.6	23.9	0.36	1.7	0.6	8	LY
NKGYZT	23.1	23.9	25.8 *	25.0	24.4	0.68	1.6	1.2	24.2	0.65	1.1	0.9	8	XX
PAYH9M	25.1	25.0	23.1	23.2	24.1	0.39	1.7	1.1	24.4	0.85	1.7	0.8	8	LA
QC239R_AL	26.1 *	24.9	23.6	24.3	24.7	0.95	1.8	1.1	24.1	0.51	1.7	1.1	8	AL
QP8TDK	23.2	22.9 L	22.5	23.2 H	22.9	-0.69	1.9	0.3	22.9	-0.70	1.9	0.3	4	LH
QW7HUP_AL	23.8	24.8	23.8	24.3	24.2	0.43	1.7	0.5	24.8	1.27	1.7	2.1 H	8	AL
RKBG2L_AL	21.3 *	23.6	23.7	23.1	22.9	-0.72	2.0	1.1	23.2	-0.46	1.7	0.8	8	AL
RYQPUC	22.8	22.9	22.2	23.4	22.8	-0.79	1.7	0.5	22.3	-1.44	1.5	0.7	8	LW
TEG9LJ	24.9	24.0	24.2	25.3	24.6	0.82	1.8	0.6	24.9	1.47	1.8	0.7	8	TT
TM9NAN	23.2	23.9	23.9	23.6	23.7	-0.03	1.3	0.4	23.5	-0.15	1.5	0.3	8	TT
TQV7R9	23.2	21.8	22.7	25.0	23.2	-0.46	1.8	1.3	23.0	-0.61	1.6	0.9	8	LH
TQV7R9_AL	25.2	25.8 *	26.5 X	27.0 *	26.1	2.25 *	1.6	0.8	25.8	2.37 *	1.8	1.0	8	AL
TUQXYK	22.2	22.4	22.2	21.8	22.1	-1.44	1.7	0.3	22.1	-1.58	1.7	0.3	4	LH
U74GVL	No Data	31.0 X	22.6	24.8	26.1	2.25 *	1.6	4.3 H	24.4	0.84	1.5	3.0 H	7	LU
UA4TRL	23.5	23.5	25.2 *	24.8	24.2	0.51	1.8	0.9	24.0	0.44	1.8	0.7	8	LU
UJU6CF	23.6	23.6	22.8	22.5	23.1	-0.51	1.7	0.6	23.0	-0.67	1.5	0.5	8	LW
UKY2AN	23.8	23.4	23.8	23.4	23.6	-0.07	1.7	0.2	23.7	0.13	1.6	0.2 L	8	LA
UKY2AN_AL	23.9	23.4	23.2 L	23.5	23.5	-0.17	1.5	0.3	23.4	-0.25	1.5	0.4	8	AL
UQBPBK	23.1	23.3	22.8	24.4	23.4	-0.27	1.7	0.7	23.5	-0.07	1.7	0.6	8	XX
VBTGMM	23.2	24.6	23.7	24.6	24.0	0.30	1.7	0.7	23.7	0.16	1.7	0.9	8	LH
VETHXG	22.8	22.6	22.5	22.7	22.6	-0.99	1.7	0.2	22.3	-1.45	1.7	0.5	8	LY
VPEM6G	23.3 L	22.5	23.4 L	23.0	23.1	-0.58	1.1	0.4	22.8	-0.82	1.1	0.4	8	BK
YLEUEE	23.6	23.0	22.3	22.5 L	22.9	-0.78	1.4	0.6	22.6	-1.05	1.4	0.5	8	LH
ZLFYF9	26.1 *	25.7	25.1	26.6 *L	25.9	2.01 *	1.4	0.6	25.3	1.88	1.4	0.8	8	LA

Consensus (All Labs) Results

Wk Mean	23.53	23.72	23.35	23.79	Month Mean	23.70	Grand Mean	23.60
Avg SDr	1.74	1.66	1.72	1.81	Avg SD	1.73	Avg SD	1.70
SD btwn Labs	1.01	1.03	0.94	1.29	SD btwn Labs	1.08	SD btwn Labs	0.92
Labs Incld	55	55	54	57	SD btwn Wks	0.93	SD btwn Wks	0.90
Labs Excld	3	4	5	2	Labs Incld	57	Labs Incld	57
Labs not Rcvd	1	0	0	0				

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300
AL	L & W Autoline 400
BK	Buchel Strip Compression Tester BK-155
LA	L&W Autoline (223 Enrollment)
LH	L&W 282
LU	L&W 52 without moisture correction(was 53)
LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 without moisture correction
LZ	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)
XX	Instrument make/model not specified by lab	

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
3KB7NE	23.1 L	23.3	24.2	22.8	23.4	0.10	1.1	0.6	23.9	0.96	1.3	1.0	12	LA
4ARBN6	25.1	24.2	24.4	25.2	24.7	1.51	2.1	0.5	24.4	1.52	2.0	0.9	12	LH
4L4JNC_AL	23.1	23.2	23.9	23.7	23.5	0.23	1.6	0.4	23.2	0.17	1.6	0.6	12	AK
6R3K2B	23.1	23.4	23.3	24.3 L	23.5	0.28	1.6	0.5	23.5	0.54	1.6	0.5	4	LH
6XUUBA	23.3	23.3	23.0	22.8	23.1	-0.18	1.9	0.2	22.7	-0.31	1.8	0.5	12	LY
76CBP6	24.1	24.4	24.0	24.1	24.2	0.94	1.9	0.2	23.9	0.93	1.5	0.6	12	LU
796JP6	23.1	22.8	23.1	22.9	23.0	-0.28	1.8	0.1	22.9	-0.13	1.8	0.2 L	12	LA
79CLL6	24.1 H	23.1	22.9	25.7 *H	24.0	0.73	2.2	1.3	23.2	0.21	2.0	1.4	12	LA
7HWZEA	24.4	23.9	23.9	24.8	24.3	1.04	1.8	0.4	21.9	-1.24	1.7	3.6 H	12	XX
8GHVHW	22.5	23.1	22.6	22.7	22.7	-0.57	1.6	0.3	22.9	-0.09	1.6	0.5	12	LW
A6EJYY_AL	25.5 *	24.2	24.4	24.7	24.7	1.48	1.9	0.6	24.3	1.41	1.9	0.8	12	AK
BJQGH6	20.8 *	24.5 H	25.1 *	27.4 X	24.5	1.25	2.0	2.7 H	24.4	1.52	2.0	1.5	12	LH
BZY7WQ_AL	25.4 *	22.2 H	22.9	22.5	23.3	0.01	1.9	1.5	23.0	-0.01	1.8	0.9	12	XX
C2PUTR	24.1	23.3	23.5	23.4	23.6	0.34	2.0	0.3	23.3	0.25	1.9	0.6	11	LW
C6UDYZ_AL	23.5 L	24.2	23.7	23.6	23.8	0.52	1.6	0.3	23.5	0.50	2.2	1.0	12	AL
C9UNVZ	23.0	25.4 *	22.5	24.3	23.8	0.56	1.9	1.3	23.8	0.88	1.9	0.9	12	LA
D3H8Q4	22.7	23.0	22.6	22.7	22.8	-0.51	1.2	0.2	22.8	-0.24	1.2	0.3 L	12	TT
DTER8Q_AL	22.5	21.9	22.2	23.1	22.4	-0.88	1.7	0.5	22.0	-1.08	1.7	0.5	12	AK
DTUBQN_AL	23.4	22.9	22.4	23.0	22.9	-0.36	1.8	0.4	23.5	0.48	1.8	0.7	12	AL
EKRLK4	22.2	22.5	22.6	23.1	22.6	-0.70	1.7	0.4	22.9	-0.12	2.0	0.4	12	LA
ELTABU	22.6	22.9	21.9	13.2 X	20.1	-3.25 X	1.7	4.7 H	21.7	-1.45	1.6	2.7 H	12	LW
EVDF8Y	23.9	22.6	23.3	23.4	23.3	0.03	1.7	0.5	22.8	-0.26	1.8	0.7	12	LW
FBK7EV	22.2	22.9	22.4	22.2	22.4	-0.86	1.7	0.3	22.4	-0.72	1.6	0.5	12	LZ
FDRLL2	22.4	22.8	22.8	22.5	22.6	-0.65	1.9	0.2	22.4	-0.74	1.9	0.6	12	LY
FYCEVW	22.0	22.6	22.1	21.1	22.0	-1.35	1.7	0.6	22.0	-1.16	1.7	0.6	4	LZ
GAJT7U	21.8	23.2	23.1	20.4 *	22.1	-1.20	1.9	1.3	20.9	-2.33 *	1.8	1.7	8	LH
J4B2ZT_AL	21.9	22.6	22.3	21.5	22.1	-1.23	1.6	0.5	22.2	-0.85	1.6	0.6	12	XX
J6LQHK	22.2	22.3	22.7	22.6	22.4	-0.84	1.6	0.2	22.8	-0.21	1.7	0.8	12	LY
JN2ZJK_AL	21.4	22.5	21.6	20.7 *L	21.5	-1.79	1.2	0.8	21.8	-1.37	1.9	0.7	8	AL
LCAHFN	21.8	23.5	22.7	23.1	22.8	-0.50	1.6	0.7	22.6	-0.50	1.3	1.0	12	LA
LFXUFU	23.0	22.6	22.7	23.0	22.8	-0.44	1.6	0.2	22.4	-0.68	1.6	0.4	12	LU
LT446P	23.3	23.4	23.4	23.6	23.4	0.17	1.7	0.1 L	22.6	-0.42	1.8	0.8	12	LU
M3PAUF	34.2 XH	36.9 XH	38.5 XH	36.9 XH	36.6	13.94 X	13.4	1.8 H	36.6	14.68 X	13.2	1.5	12	LH
MMPU8R	22.4	21.8	22.1	22.8	22.3	-1.03	1.5	0.4	22.7	-0.38	1.7	0.7	12	LA
MN42UU	28.6 XL	29.1 XL	29.7 XL	30.5 XL	29.5	6.48 X	0.0	0.8	29.2	6.64 X	2.3	1.2	12	TT

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 35 lb Linerboard - 35E2

TAPPI Official Test Method T826

Report #615 (N)
December 2020

	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
MNMVGP	24.0	24.2	24.8	24.1	24.3	1.05	1.8	0.4	23.9	0.96	1.7	0.8	12	LZ
NKGYZT	23.5	23.7	26.6 X	24.3	24.5	1.34	1.9	1.4	37.2	15.32 X	1.3	20.0 H	12	XX
PAYH9M	24.6	25.7 *	24.5	24.3	24.8	1.58	1.6	0.6	24.1	1.12	1.6	1.1	11	LA
QC239R_AL	23.5	24.8	24.2	23.5	24.0	0.78	1.7	0.6	25.2	2.35 *	2.0	3.7 H	10	AL
QP8TDK	21.8	23.2	23.1	20.4 *	22.1	-1.20	1.9	1.3	21.2	-1.98 *	2.0	1.3	8	LH
QW7HUP_AL	23.8	22.9	23.3	23.5	23.4	0.13	1.6	0.4	23.4	0.43	1.6	0.4	11	AL
RKBG2L_AL	21.8	23.0	22.2	22.3	22.3	-0.97	1.5	0.5	22.5	-0.59	1.7	0.6	12	AL
RYQPUC	23.3	22.2	22.6	22.2	22.6	-0.72	1.8	0.5	22.4	-0.68	1.7	0.6	12	LW
TEG9LJ	25.5 *	25.4 *	24.8	25.2 H	25.2	2.06 *	2.1	0.3	23.4	0.41	1.8	1.5	12	TT
TM9NAN	23.1	22.8	22.4	23.0	22.8	-0.47	1.5	0.3	22.7	-0.34	1.4	0.3	12	TT
TQV7R9	22.9	22.2	24.0	24.7	23.4	0.19	1.6	1.1	22.6	-0.43	1.6	1.1	12	LH
TQV7R9_AL	24.2	25.9 *	26.0 X	25.2	25.3	2.17 *	2.0	0.8	25.2	2.35 *	1.8	1.0	12	AL
TUQXYK	22.9	22.9	22.6	22.9	22.8	-0.45	1.8	0.1	23.7	0.77	1.7	1.0	12	LH
U74GVL	23.2	23.8	23.0 H	22.9	23.2	-0.04	2.0	0.4	23.3	0.28	1.9	0.8	9	LU
UA4TRL	24.2	23.8	25.3 *	26.3 *	24.9	1.71	1.9	1.1	24.4	1.47	1.9	0.9	12	LU
UJU6CF	22.6	23.6	22.6	22.4	22.8	-0.48	1.7	0.6	22.7	-0.32	1.5	0.7	12	LW
UKY2AN	23.0	23.0	23.0	23.4	23.1	-0.14	1.6	0.2	22.7	-0.33	1.5	0.5	12	LA
UKY2AN_AL	22.6	22.8	22.6	22.0	22.5	-0.80	1.7	0.3	22.8	-0.28	1.6	0.5	12	AL
UQBPBK	22.8	23.3	22.8	24.0	23.2	-0.06	1.5	0.6	23.0	-0.01	1.6	0.5	12	XX
VBTGMM	23.1	24.8	23.1	23.8	23.7	0.45	1.7	0.8	23.3	0.33	1.8	0.8	12	LH
VETHXG	21.8	22.2	21.5	21.2	21.7	-1.63	1.7	0.4	21.5	-1.69	1.6	0.5	12	LY
VPEM6G	21.4	22.3	22.4	21.6 L	21.9	-1.41	1.2	0.5	22.5	-0.58	1.1	0.6	12	BK
YLEUEE	22.5	22.1	22.4	22.3	22.3	-0.97	1.5	0.2	22.9	-0.14	1.5	0.7	12	LH
ZLFYF9	25.6 *L	25.2 L	25.6 *L	24.5	25.2	2.06 *	1.0	0.5	24.7	1.81	1.2	0.7	12	LA

Consensus (All Labs) Results

Wk Mean	23.12	23.33	23.14	23.20	Month Mean	23.25	Grand Mean	23.03
Avg SDr	1.73	1.71	1.69	1.69	Avg SD	1.71	Avg SD	1.71
SD btwn Labs	1.08	0.99	0.94	1.29	SD btwn Labs	0.96	SD btwn Labs	0.92
Labs Incld	57	57	55	55	SD btwn Wks	0.74	SD btwn Wks	1.11
Labs Excld	2	2	4	4	Labs Incld	56	Labs Incld	56
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	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 (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		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2UL9AF	113.2	-2.01 *	8.95	L	122.4	-1.71	10.23	3	EV
4ARBN6	130.8	-0.55	14.19		143.2	0.26	30.81	4	EV
4L4JNC	134.3	-0.25	19.12		138.5	-0.18	6.55	4	EV
796JP6	140.7	0.28	13.01		142.0	0.15	1.86 L	3	LS
79CLL6	130.0	-0.61	14.81		142.3	0.17	26.06	4	LA
8GHVHW	141.3	0.33	23.71		138.4	-0.19	1.99 L	4	LA
A6EJYY_AL	177.2	3.32 X	48.94	H	140.0	-0.04	26.96	4	AK
BJQGH6	164.5	2.26 *	22.77		162.4	2.08 *	10.87	4	LS
BZY7WQ_AL	119.0	-1.53	10.59		132.4	-0.76	10.24	4	XX
C2PUTR	119.8	-1.46	10.85		122.5	-1.70	2.88	4	XX
C6UDYZ_AL	143.2	0.49	15.78		154.3	1.32	14.39	4	AL
C9UNVZ	140.0	0.22	19.36		151.2	1.02	11.29	4	LA
DTER8Q	235.4	8.16 X	25.18		150.5	0.95	56.63 H	4	LS
EKRLK4	125.8	-0.96	45.38	H	133.2	-0.69	12.44	4	LA
EVDF8Y	144.8	0.62	17.32		141.0	0.06	6.24	4	EV
J4B2ZT_AL	151.7	1.20	47.95	H	144.2	0.36	6.12	4	AL
JN2ZJK_AL	148.9	0.96	24.97		141.4	0.10	10.25	3	AL
LT446P	153.1	1.31	9.97		155.9	1.47	4.33	4	EV
MNMVGP	133.6	-0.31	12.37		135.4	-0.48	4.52	4	LS
PAYH9M	138.1	0.07	14.70		146.6	0.59	7.82	4	LA
QW7HUP_AL	127.5	-0.82	14.39		131.2	-0.87	2.65 L	4	AL
TQV7R9_AL	127.3	-0.84	12.79		127.6	-1.22	1.83 L	4	AL
U74GVL	140.2	0.24	20.45		145.5	0.48	4.14	4	EV
UA4TRL	148.2	0.90	15.33		146.4	0.57	8.77	4	EV
UKY2AN	260.1	10.22 X	26.78		203.1	5.95 X	67.77 H	4	LA
UKY2AN_AL	151.3	1.16	18.58		145.3	0.46	4.17	4	AL
VETHXG	142.9	0.46	16.54		150.4	0.94	7.58	4	EV
XMJRC6	134.3	-0.25	23.97		126.9	-1.29	14.65	3	LS
ZLFYF9	126.5	-0.91	5.46	L	120.8	-1.86	8.04	2	EV

Consensus (All Labs) Results

Month Mean	137.35	Grand Mean	140.41
Avg SD	20.54	Avg SD Months	16.01
SD btwn Labs	12.01	SD btwn Labs	10.54
Labs Incld	26	Labs Incld	28

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	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 - 42F3

TAPPI Official Test Method T538

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3KB7NE	364.0	0.61	5.08		367.4	1.43	4.81	2	XX
4L4JNC_AL	351.6	-0.82	9.96		351.7	-0.96	0.07	2	AK
A6EJYY_AL	360.1	0.16	7.84		356.8	-0.18	4.67	2	AK
DTUBQN_AL	369.2	1.21	8.73		366.0	1.22	4.53	2	AL
EP8U94	376.5	2.06 *	13.30		382.7	3.75 X	8.77	2	TS
FBK7EV	362.7	0.46	5.07		359.9	0.30	3.87	2	XX
J3YAZY	402.5	5.07 X	6.65		409.7	7.83 X	10.08	2	TS
LFXUFU	362.7	0.46	11.61		363.7	0.87	1.41	2	XX
QC239R	352.7	-0.70	3.23	L	364.6	1.00	16.76	2	PP
QW7HUP_AL	354.0	-0.55	18.17	H	352.3	-0.86	2.40	2	AL
RKBG2L_AL	353.4	-0.61	7.24		354.7	-0.49	1.84	2	AL
TQV7R9_AL	349.9	-1.02	6.45		350.8	-1.09	1.27	2	AL
UKY2AN_AL	347.8	-1.26	6.01		349.8	-1.24	2.83	2	AL

Consensus (All Labs) Results

Month Mean	358.71	Grand Mean	357.97
Avg SD	9.45	Avg SD Months	5.89
SD btwn Labs	8.64	SD btwn Labs	6.60
Labs Incld	12	Labs Incld	11

Key to Instrument Codes Reported by Participants

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2UL9AF	101.0	0.30	7.42		105.7	0.58	9.50	3	HY
3KB7NE	83.8	-1.11	2.77		86.4	-0.99	1.80 L	4	SC
4ARBN6	113.8	1.35	5.63		106.0	0.60	8.22	4	SC
4L4JNC	81.2	-1.32	2.95		83.2	-1.25	1.50 L	4	TM
6XUUBA	90.0	-0.60	6.12		84.5	-1.14	4.56	4	XX
8GHVHW	116.2	1.55	2.95		112.6	1.14	3.97	4	HY
8YY2R8	80.9	-1.35	2.45		85.2	-1.08	14.50	3	TM
A6EJYY	88.0	-0.77	6.56		88.3	-0.83	3.37	4	SC
BJQGH6	96.0	-0.11	12.06 H		129.4	2.50 *	34.38 H	4	TM
BZY7WQ	111.2	1.14	11.12		106.2	0.62	4.19	4	TM
C6UDYZ	121.0	1.95 *	5.48		119.0	1.66	3.16	4	SC
DTER8Q	89.7	-0.62	6.76		97.9	-0.05	10.96	4	TM
DTUBQN	41.9	-4.55 X	0.64 L		42.4	-4.56 X	0.85 L	4	LZ
E2EYYV	99.1	0.15	3.26		92.6	-0.48	4.39	4	TM
FYCEVW	136.4	3.21 X	69.38 H		107.1	0.69	41.45	2	SC
JN2ZJK	200.0	8.44 X	7.91		158.0	4.83 X	56.02 H	3	SC
LFXUFU	110.0	1.04	6.09		107.3	0.71	2.63	4	HY
LT446P	92.4	-0.40	4.98		89.9	-0.70	3.12	4	TM
MMPU8R	104.2	0.57	5.63		105.7	0.58	2.13	4	HZ
QC239R	107.2	0.81	11.80 H		107.6	0.73	1.27 L	4	HY
RKBG2L	96.4	-0.08	4.25		93.7	-0.39	2.12	4	SC
U74GVL	75.8	-1.77	1.30 L		83.3	-1.24	5.60	4	TM
UA4TRL	85.8	-0.95	3.03		82.3	-1.32	4.44	4	TM
UKY2AN	93.6	-0.31	4.16		92.5	-0.49	2.41	4	TM
XMJRC6	101.8	0.37	4.97		98.4	-0.01	3.68	4	HY
ZLFYF9	90.0	-0.60	6.08		92.6	-0.48	3.21	4	TM
ZWVXYJ	106.4	0.75	4.39		106.2	0.62	2.32	4	TM

Consensus (All Labs) Results

Month Mean	97.31	Grand Mean	98.52
Avg SD	6.17	Avg SD Months	12.00
SD btwn Labs	12.17	SD btwn Labs	12.31
Labs Incld	24	Labs Incld	25

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	96.16	11.85	1.16	21
Modified Scott Bond Mechanics	113.10	4.38	15.79	2

Analysis Notes

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

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal Bond Tester	HZ	Huygen Internal Bond Tester with AccuPress
LZ	L&W (model not specified)	SC	Scott Internal Bond Tester (Manual)
TM	TMI Monitor/Internal Bond Tester	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months		Months
3KB7NE	28.6	0.37	0.89		28.9	0.49	0.30	L	4
4ARBN6	27.1	-0.13	4.48		28.6	0.42	1.25		4
4L4JNC	25.2	-0.75	3.39		27.4	-0.02	1.48		4
6XUUBA	23.8	-1.21	3.49		21.1	-2.16 *	3.55		4
796JP6	27.2	-0.09	0.45	L	26.5	-0.30	0.58	L	3
7BTVNB	26.8	-0.22	2.49		27.3	-0.04	0.71		2
8GHVHW	31.0	1.16	1.22		30.4	1.02	2.82		4
A6EJYY	29.8	0.77	4.42		29.6	0.74	0.25	L	4
BJQGH6	21.4	-1.99 *	1.52		23.6	-1.29	1.75		4
BZY7WQ	29.0	0.51	1.97		29.9	0.84	1.77		4
C2PUTR	31.4	1.29	5.55		29.6	0.75	4.49		4
C6UDYZ	24.2	-1.07	1.30		25.7	-0.58	1.32		4
DTER8Q	26.8	-0.22	5.54		28.1	0.24	2.13		4
DTUBQN	30.0	0.83	1.00		26.7	-0.24	4.64		4
EVDF8Y	26.2	-0.42	4.15		26.9	-0.17	1.40		4
FBK7EV	31.4	1.29	2.27		30.6	1.09	2.07		4
J4B2ZT	24.2	-1.07	2.86		24.5	-1.00	0.25	L	4
JN2ZJK	21.6	-1.93 *	1.14		28.4	0.34	6.29		3
K86F2N	23.4	-1.34	1.52		24.1	-1.12	0.60		4
LFXUFU	26.8	-0.21	1.08		25.2	-0.74	1.99		4
LT446P	28.0	0.17	1.87		28.1	0.24	2.41		4
MNMVGP	29.6	0.71	5.38		30.3	0.97	1.79		4
PAYH9M	24.0	-1.14	1.97		21.6	-1.96 *	4.57		4
PRV6CQ	31.6	1.35	2.41		30.5	1.03	3.25		4
QC239R	28.7	0.40	2.86		28.8	0.46	1.86		4
QUH7VJ	32.4	1.62	0.89		31.8	1.48	0.68		4
QW7HUP	29.2	0.57	3.73		30.6	1.09	1.62		4
U74GVL	30.4	0.96	3.13		30.1	0.90	2.79		4
UA4TRL	25.4	-0.68	4.04		27.3	-0.05	1.84		4
UKY2AN	24.2	-1.07	1.48		23.9	-1.21	0.79		4
VBTGMM	30.2	0.89	2.64		29.9	0.86	0.26	L	4
VETHXG	29.5	0.66	1.63		21.4	-2.05 *	13.93	H	4

Consensus (All Labs) Results

Month Mean	27.47	Grand Mean	27.41
Avg SD	2.96	Avg SD Months	3.46
SD btwn Labs	3.05	SD btwn Labs	2.94
Labs Incld	32	Labs Incld	32

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
4ARBN6	22.3	0.02	2.34		22.2	-0.05	0.38	4	LP
6XUUBA	22.2	-0.06	0.93		22.5	0.18	0.66	4	LP
796JP6	21.4	-0.57	1.07		21.5	-0.57	0.29	3	LA
79CLL6	22.5	0.18	0.50	L	22.6	0.24	0.85	4	LA
8GHVHW	22.7	0.30	1.49		22.4	0.09	0.40	4	LP
A6EJYY_AL	19.4	-1.95 *	2.33		19.0	-2.42 *	1.53	4	AK
BJQGH6	21.7	-0.37	2.91		23.3	0.80	2.09 H	4	TD
BZY7WQ_AL	23.8	1.06	2.30		22.9	0.53	0.68	4	XX
C2PUTR	20.8	-0.98	1.14		21.0	-0.93	0.49	4	LP
C6UDYZ_AL	22.0	-0.17	1.05		20.8	-1.06	1.71	4	AL
C9UNVZ	24.1	1.21	2.04		23.5	0.97	0.64	4	LA
CHYH48	22.8	0.37	2.49		22.8	0.45	2.55 H	3	GG
DQNQ23	22.1	-0.10	2.42		22.4	0.11	0.28	4	XX
DTUBQN_AL	21.9	-0.25	1.45		23.1	0.64	1.59	4	AL
EVDF8Y	19.2	-2.02 *	1.93		19.6	-1.98 *	0.90	4	XX
FBK7EV	23.3	0.70	2.15		23.2	0.70	1.14	4	GA
FDRLL2	21.3	-0.64	1.16		21.0	-0.89	0.50	4	LP
HA2Y7J	20.2	-1.40	1.28		19.9	-1.75	0.42	2	GA
J4B2ZT_AL	22.2	-0.05	1.49		21.9	-0.24	0.56	4	AL
JN2ZJK_AL	20.9	-0.90	1.32		21.6	-0.50	0.60	3	AL
LFXUFU	21.0	-0.84	3.35	H	22.1	-0.08	1.23	4	TP
LT446P	24.2	1.27	2.69		24.3	1.56	1.79	4	GA
P6HCCC	22.1	-0.09	0.85	L	23.1	0.66	0.71	4	LP
PAYH9M	21.6	-0.45	2.02		21.6	-0.50	0.24	4	LA
PRV6CQ_AL	22.3	0.00	2.07		22.4	0.10	0.86	3	AL
QC239R	19.9	-1.58	4.14	H	21.0	-0.88	0.84	4	TP
QUH7VJ	6.4	-10.67 X	0.34	L	17.6	-3.45 X	7.48 H	4	LA
QW7HUP_AL	21.9	-0.25	1.50		21.4	-0.60	0.67	4	AL
RCFLVA	21.6	-0.43	1.47		21.2	-0.76	0.84	4	LP
RKBG2L_AL	21.7	-0.36	1.89		22.2	-0.05	0.80	4	AL
TQV7R9_AL	23.7	0.96	1.11		23.9	1.21	0.33	4	AL
U74GVL_AL	24.6	1.60	2.33		23.1	0.64	1.38	3	AL
UA4TRL_AL	23.9	1.12	1.66		23.4	0.86	0.43	4	AL
UKY2AN	26.2	2.67 *	0.98		25.1	2.17 *	0.78	4	LA
UKY2AN_AL	24.0	1.19	2.35		24.7	1.82	0.52	4	AL
XMJRC6	22.8	0.39	1.98		22.2	-0.06	0.99	4	LP
ZK3EKD	22.9	0.44	1.30		21.7	-0.42	0.84	4	XX

Consensus (All Labs) Results

Month Mean	22.26	Grand Mean	22.23
Avg SD	1.97	Avg SD Months	1.03
SD btwn Labs	1.49	SD btwn Labs	1.35
Labs Incld	36	Labs Incld	36

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
GA	Gurley Precision #4340 Automatic Densometer	GG	Gurley Precision #4320 Densometer
LA	L&W Autoline (237 Enrollment)	LP	L&W Air Permeance Tester SE 166
TD	TMI Gurley Densometer	TP	Technidyne Profile/ plus Roughness & Porosity
XX	Instrument make/model not specified by lab		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2RXWBA	52.5 *	57.1	58.4	59.6	56.9	-0.27	3.3	3.1	56.9	-0.16	3.8	2.2	16	TH
3KQP9C	59.9 L	59.9 L	59.8	59.8 L	59.9	0.88	1.6	0.0 L	59.6	0.81	1.6	1.3	16	MB
4UYGDZ	58.4	57.9	58.3	57.4	58.0	0.15	3.4	0.5	57.7	0.13	3.7	0.7 L	16	LD
6R3K2B	50.6 *	51.2	57.4	53.7 L	53.2	-1.68	2.6	3.1	53.2	-1.50	2.6	3.1	4	LD
6XUUBA	56.6	55.1	59.4	56.8	57.0	-0.24	4.1	1.8	57.2	-0.04	4.0	1.9	16	LZ
796JP6	58.3	58.3	57.8	59.1	58.4	0.30	2.2	0.5	58.0	0.23	1.9	0.5 L	12	LD
7D3WV3	No Data	59.3	No Data	63.6 *	61.4	1.48	4.0	3.1	58.0	0.25	3.8	5.6 H	13	LD
7HWZEA	60.3	62.3	62.3	64.2 *	62.3	1.81	2.2	1.6	60.4	1.11	1.4	1.7	16	XX
8E9NE4	62.7 *	64.1 *	64.0 *	64.8 *	63.9	2.43 *	5.0	0.9	62.8	1.99 *	4.4	2.7	12	TX
8GHVHW	56.0	55.0	56.4	55.9	55.8	-0.69	3.6	0.6	55.8	-0.58	3.3	1.1	12	LD
8LCMX7	58.1	59.1	58.4	57.9	58.4	0.30	2.9	0.5	57.9	0.20	3.5	0.5 L	16	LD
8YY2R8	59.7	58.0 L	59.1	59.7	59.1	0.59	1.9	0.8	53.1	-1.55	1.9	9.3 H	12	TU
A6EJYY	49.6 X	52.0	51.2 *	56.7	52.4	-2.01 *	3.3	3.1	51.6	-2.09 *	3.4	2.5	16	LD
A6VQ83	59.2	59.4	58.1	58.6	58.8	0.48	3.4	0.6	58.1	0.27	3.4	0.7 L	16	LC
C2PUTR	55.3	57.4	56.3	58.2	56.8	-0.30	2.6	1.3	57.6	0.08	2.8	1.3	16	LD
C9UNVZ	60.2 H	56.7 H	55.4	57.9	57.6	-0.01	5.9	2.1	57.9	0.20	5.0	2.3	16	TU
D3H8Q4	56.8	56.5	57.8 H	57.0	57.0	-0.21	5.6	0.6	57.5	0.04	5.4	1.2	16	TG
DTUBQN	54.9	53.7	54.9	54.1	54.4	-1.23	3.0	0.6	54.4	-1.08	3.7	2.1	16	LD
EDX87X	59.7	61.7	63.5 *	63.0	62.0	1.69	4.2	1.7	62.0	1.71	5.6	1.6	16	LD
EKRLK4	54.0	54.2	53.5	55.1	54.2	-1.30	3.1	0.6	54.1	-1.17	4.0	1.8	16	MB
ELTABU	60.5	60.6	56.2	59.3	59.1	0.60	2.7	2.0	57.8	0.16	3.8	2.0	16	LZ
FBK7EV	56.1	59.9	57.1	55.6	57.2	-0.16	2.9	1.9	57.0	-0.11	3.0	1.9	16	LZ
FYCEVW	53.7	53.6	53.3	51.9 *	53.1	-1.72	2.5	0.9	53.9	-1.27	3.2	1.2	8	LC
GAJT7U	54.3	52.5	53.7	52.1	53.1	-1.71	4.2	1.0	50.0	-2.66 *	3.6	3.2	12	TH
HA2Y7J	57.7	57.6	57.7	57.2	57.5	-0.02	3.1	0.2 L	59.5	0.77	3.9	2.9	8	LD
J4B2ZT	54.4	55.1	59.0 H	53.8	55.6	-0.78	4.7	2.4	56.9	-0.17	4.2	1.8	16	LZ
J6LQHK	57.9	58.5	60.2	56.8	58.4	0.30	3.2	1.4	58.9	0.56	3.7	1.5	16	LD
K86F2N	54.4	55.4	56.3	55.3	55.3	-0.87	3.5	0.8	54.9	-0.89	3.5	1.9	16	LZ
LFXUFU	56.7	60.8	58.5	57.9	58.5	0.34	4.0	1.7	58.1	0.28	3.9	1.5	16	LC
LT446P	54.8	58.6	58.2	58.2	57.5	-0.05	3.1	1.8	57.1	-0.08	3.4	1.7	16	LD
LZJN7F	58.1 L	57.9 L	58.3	58.2 L	58.1	0.21	1.5	0.2 L	57.8	0.17	1.5	0.2 L	16	LD
MMPU8R	55.1	54.3 L	57.1	56.7	55.8	-0.69	3.3	1.3	55.7	-0.59	3.3	2.0	16	LD
MN42UU	59.4	59.2	60.6	60.5	59.9	0.91	3.1	0.7	58.7	0.48	3.1	1.5	16	EM
P6HCCC	57.3	58.3	59.2	58.7	58.4	0.31	3.0	0.8	58.3	0.35	3.1	1.1	16	LD
PAYH9M	36.4 XL	49.8 *H	50.1 *	52.2	47.1	-4.04 X	6.4	7.2 H	50.9	-2.34 *	5.5	5.9 H	13	MB

	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
Q4RB7P	58.9	58.7	58.9	58.9	58.8	0.48	4.4	0.1 L	59.1	0.64	3.2	0.2 L	16	LD
QC239R	56.4	59.6	55.8	54.9	56.7	-0.35	3.5	2.0	55.8	-0.56	3.6	1.3	16	LD
RCFLVA	60.5	61.4	58.7	60.8	60.3	1.06	3.8	1.2	61.0	1.35	4.0	1.8	16	LD
TM9NAN	57.0 H	58.4	56.1 H	58.5	57.5	-0.03	5.6	1.2	57.8	0.16	4.5	1.4	16	TJ
TUQXYK	53.6	52.3	52.4	54.3	53.2	-1.71	3.4	1.0	53.5	-1.40	2.9	1.1	12	LD
TYLN7G	59.2	59.2	59.2 L	59.5 L	59.2	0.64	1.7	0.1 L	59.6	0.81	2.1	0.4 L	16	LD
UA4TRL	57.1	55.6	53.4	54.4	55.1	-0.95	4.9	1.6	57.4	0.02	4.0	2.2	16	LC
UJU6CF	58.8	57.5	58.4	59.3	58.5	0.36	3.4	0.8	58.5	0.42	3.4	0.9	16	LD
UKY2AN	61.1	59.9 H	55.4	57.2	58.4	0.32	4.4	2.6	58.2	0.31	4.2	2.1	16	LD
VBTGMM	60.6	59.5	58.7	61.8	60.1	0.98	3.5	1.3	59.1	0.63	3.5	1.2	16	LD
VETHXG	59.2	59.3	58.7	57.6	58.7	0.44	3.4	0.8	58.5	0.44	3.9	1.1	16	EN
WE8B3J	59.5 H	48.8 *H	46.9 XH	55.7 H	52.7	-1.88	9.3	5.9 H	62.9	2.04 *	5.9	6.8 H	16	LC
YLEUEE	59.8	56.5	57.7	57.9	58.0	0.15	2.6	1.4	58.4	0.40	2.4	1.0	16	EN
YMQQJJ	59.3	58.3	59.1	58.9	58.9	0.51	2.1	0.4	58.2	0.33	2.2	1.0	16	LC
ZLFYF9	60.1	60.5	61.3	60.0	60.5	1.11	3.0	0.6	59.8	0.89	3.1	3.3	16	LC

Consensus (All Labs) Results

Wk Mean	57.55	57.33	57.53	57.74	Month Mean	57.59	Grand Mean	57.34
Avg SDr	3.73	3.83	3.55	3.94	Avg SD	3.73	Avg SD	3.63
SD btwn Labs	2.60	3.24	2.84	2.94	SD btwn Labs	2.59	SD btwn Labs	2.74
Labs Incld	47	50	48	50	SD btwn Wks	1.69	SD btwn Wks	2.61
Labs Excld	2	0	1	0	Labs Incld	49	Labs Incld	50
Labs not Rcvd	1	0	1	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TG	TMI Compression Tester, Model 17-10	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	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 - CM11

TAPPI Official Test Method T843

Report #615 (N)
December 2020

	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
3KQP9C	66.8	66.7 L	66.7	66.8	66.8	-1.07	1.6	0.0 L	66.0	-2.53 *	1.6	0.9	16	MB
796JP6	67.9	68.2 L	68.4	69.0	68.4	-0.12	1.8	0.5	68.5	-0.29	1.7	0.4 L	12	LD
7HWZEA	70.1 L	69.2 L	66.9 L	72.0	69.5	0.57	1.4	2.1	69.1	0.26	1.0	2.4	16	XX
8GHVHW	70.3	72.2 *	73.5 *	74.0 *	72.5	2.30 *	3.4	1.7	72.9	3.60 X	3.5	1.6	12	LD
A6EJYY	60.3 XH	69.8	69.0	69.7	67.2	-0.81	9.9	4.7	69.6	0.72	6.0	3.8	16	LD
A6VQ83	68.2	68.9	67.7	68.5	68.3	-0.15	4.3	0.5	68.4	-0.36	4.0	0.6	16	LD
C2PUTR	71.3	70.4	73.5 *H	68.1 H	70.8	1.32	4.8	2.2	71.2	2.11 *	4.2	1.8	16	LD
DQNQ23	70.4	69.1 L	69.6	69.3 L	69.6	0.60	1.8	0.6	68.3	-0.43	2.3	1.4	16	LZ
DTUBQN	68.9	67.9	68.2	66.9	67.9	-0.37	2.5	0.8	68.2	-0.60	3.4	0.9	16	LD
ELTABU	68.3	71.1	68.3	67.1	68.7	0.06	3.0	1.7	68.6	-0.24	3.4	2.0	16	LZ
GAJT7U	58.0 X	58.7 X	59.1 X	57.7 XL	58.4	-6.00 X	2.9	0.6	58.2	-9.42 X	3.2	1.9	12	TH
J4B2ZT	67.4	66.3	69.5	66.9	67.5	-0.63	3.7	1.4	67.8	-0.90	3.9	1.7	16	LZ
LFXUFU	69.7	70.6	67.0	69.8	69.3	0.42	2.5	1.6	70.4	1.42	2.8	2.1	16	LC
LZJN7F	68.8	68.9 L	68.9	68.7	68.8	0.14	1.7	0.1 L	68.9	0.10	1.6	0.4 L	16	LD
M3PAUF	55.7 X	58.0 X	58.1 X	59.2 X	57.8	-6.36 X	3.9	1.5	57.5	-10.08 X	4.5	1.2	16	LD
P6HCCC	67.9	68.5	68.9	67.7	68.2	-0.20	3.3	0.6	68.1	-0.63	3.3	1.5	16	LD
QC239R	68.2	68.2	70.5	68.3	68.8	0.14	4.4	1.1	70.0	1.03	3.8	1.5	16	LD
RCFLVA	66.0	65.8	69.3	68.6	67.4	-0.67	2.6	1.8	68.2	-0.60	3.4	1.5	16	LD
UA4TRL	66.5 H	70.2 H	53.3 XH	67.1	64.3	-2.53 *	7.1	7.5 H	69.0	0.14	4.9	4.7 H	16	XX
UJU6CF	68.2	67.1	73.1	73.7 *	70.5	1.13	3.2	3.4	70.2	1.23	2.7	2.3	16	LD
UKY2AN	65.2 H	67.7	68.6	69.1	67.7	-0.54	4.2	1.7	68.2	-0.55	4.2	1.7	16	LD
VETHXG	72.9 *	66.7	71.3	70.0	70.2	0.96	3.3	2.6	69.3	0.41	3.8	2.9	16	XX
VPEM6G	66.6	68.0	66.9	68.9	67.6	-0.57	3.6	1.1	68.5	-0.28	3.1	1.0	16	LD

Consensus (All Labs) Results

Wk Mean	68.48	68.65	69.29	69.05	Month Mean	68.58	Grand Mean	68.83
Avg SDr	3.05	3.90	3.18	3.27	Avg SD	4.03	Avg SD	3.46
SD btwn Labs	1.89	1.67	2.12	2.04	SD btwn Labs	1.70	SD btwn Labs	1.13
Labs Incld	20	21	20	21	SD btwn Wks	2.45	SD btwn Wks	2.07
Labs Excld	3	2	3	2	Labs Incld	21	Labs Incld	20
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
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 - CM11

TAPPI Official Test Method T822

Report #615 (N)
December 2020

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
2RXWBA	34.7 *	34.2 *	34.0 XL	38.5 *	35.4	-5.64 X	2.2	2.1	35.5	-4.58 X	2.7	1.7	16	TH
3KQP9C	42.3	42.3	42.2	42.3 L	42.3	-1.26	1.7	0.0 L	41.7	-1.30	1.6	1.0	12	MB
4UYGDZ	44.3	44.3	44.9	43.0	44.1	-0.07	2.6	0.8	43.8	-0.16	2.5	0.8 L	16	LC
796JP6	43.7	43.9	43.8	44.0	43.9	-0.25	2.9	0.1 L	44.1	-0.01	3.0	0.4 L	12	LD
7D3WV3	No Data	46.0	No Data	41.0 L	43.5	-0.48	2.6	3.5	46.1	1.06	3.0	3.5	14	LZ
8E9NE4	45.2	45.0	42.5 H	45.8	44.6	0.23	4.6	1.5	41.6	-1.35	3.7	2.9	16	LD
8GHVHW	44.7	43.2	45.0	44.1	44.2	-0.01	3.2	0.8	44.1	0.00	3.4	1.3	16	XX
8YY2R8	41.2	42.5	41.9	41.9	41.9	-1.51	2.2	0.5	47.9	2.04 *	2.0	10.0 H	12	TU
DTUBQN	47.2	45.7	45.3	45.2	45.8	1.01	2.5	0.9	42.9	-0.64	3.3	1.9	16	LD
EDX87X	46.4	44.7	45.2	46.5	45.7	0.92	3.1	0.9	43.9	-0.12	3.5	3.9	16	LD
FBK7EV	44.1	42.6	43.2	44.5	43.6	-0.41	3.4	0.9	43.0	-0.58	3.2	1.2	16	LD
G832HL	40.6 H	40.9	40.8 *	41.3 H	40.9	-2.12 *	5.2	0.3 L	40.1	-2.12 *	5.7	1.8	16	TX
GAJT7U	40.0	41.6	44.9	42.7	42.3	-1.25	3.9	2.1	43.8	-0.16	4.2	1.8	12	TH
HA2Y7J	42.9	44.3	42.7	45.2	43.8	-0.29	3.1	1.2	43.6	-0.27	3.0	1.8	8	LD
L4ZU3P	36.5 *	37.3	35.7 X	38.1 *	36.9	-4.69 X	2.5	1.0	41.2	-1.55	3.0	3.5	16	LZ
LCAHFN	46.8	44.2	46.2	42.5	44.9	0.44	3.7	2.0	44.0	-0.06	3.9	2.4	16	LZ
LFXUFU	45.2 L	46.6	45.2	44.0	45.3	0.64	2.8	1.1	45.1	0.54	2.8	1.6	16	LC
MMPU8R	45.8	43.9	45.6	45.7	45.2	0.62	3.7	0.9	45.3	0.61	3.6	1.3	16	LD
MN42UU	44.7	45.6	48.9 *	46.1	46.3	1.30	4.2	1.8	46.1	1.05	3.7	1.4	16	EM
P6HCCC	41.3	40.8	44.8	42.4	42.3	-1.24	3.6	1.8	43.1	-0.55	3.2	1.5	16	LD
PAYH9M	54.3 XL	36.0 *	47.2	47.6	46.3	1.28	3.5	7.6 H	46.9	1.47	3.5	6.4 H	15	MB
Q4RB7P	44.0	43.7	43.9	44.0	43.9	-0.23	3.4	0.1 L	43.7	-0.25	2.4	0.3 L	16	LD
QC239R	46.4	46.3	45.7	45.4	45.9	1.07	3.9	0.5	45.8	0.87	3.3	0.9	16	LD
RCFLVA	44.0	42.9	45.9	43.3	44.0	-0.14	3.4	1.3	44.1	0.00	3.1	1.2	16	LD
TYLN7G	44.2 L	44.2 L	44.2 L	44.2 L	44.2	-0.03	1.1	0.0 L	44.0	-0.07	1.7	0.5 L	16	LD
V634MJ	42.7	42.8	44.4 L	45.4	43.8	-0.29	3.1	1.3	43.6	-0.27	3.0	1.8	16	TH
WE8B3J	35.3 *	33.9 *	32.8 X	33.8 X	33.9	-6.54 X	3.7	1.0	36.0	-4.35 X	5.5	1.8	16	XX
YMQQJJ	47.1	48.0	47.6 L	47.6 L	47.6	2.10 *	1.4	0.3	47.5	1.82	4.2	2.1	16	LC

Consensus (All Labs) Results

Wk Mean	43.12	42.76	44.66	43.78	Month Mean	44.25	Grand Mean	44.12
Avg SDr	3.11	3.02	3.37	3.47	Avg SD	3.28	Avg SD	3.31
SD btwn Labs	3.43	3.55	1.87	2.36	SD btwn Labs	1.57	SD btwn Labs	1.88
Labs Incld	26	28	24	27	SD btwn Wks	1.98	SD btwn Wks	3.00
Labs Excld	1	0	3	1	Labs Incld	25	Labs Incld	26
Labs not Rcvd	1	0	1	0				

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T826

Report #615 (N)
December 2020

	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
4UYGDZ	14.6	14.1	14.9 *	14.2	14.4	1.31	1.2	0.4	14.2	1.19	1.0	0.4	16	LH
796JP6	13.7	13.8	13.8	13.9	13.8	-0.19	1.1	0.1	13.8	-0.14	1.1	0.1 L	12	LB
7HWZEA	13.2	14.8	14.0	14.8 L	14.2	0.78	1.0	0.8	14.1	0.85	1.2	0.6	16	XX
8LCMX7	13.7	13.3	13.9	14.0	13.7	-0.34	0.9	0.3	13.7	-0.21	0.9	0.4	16	LB
A6EJYY	14.1	14.3	14.7	14.8	14.5	1.39	1.0	0.3	14.3	1.30	1.1	0.4	16	LA
A6VQ83	13.6	13.8	13.2	14.2	13.7	-0.40	0.9	0.4	13.6	-0.46	0.9	0.4	16	LB
C9UNVZ	12.8	14.5	13.2	14.9 H	13.8	-0.07	1.2	1.0 H	14.1	0.73	1.3	0.9	16	LA
DTER8Q	14.4	14.1	14.0	14.0	14.1	0.56	1.0	0.2	13.9	0.19	1.0	0.3	16	LA
DTUBQN	14.2 H	14.3	14.1	13.9	14.1	0.58	1.3	0.2	14.1	0.69	1.2	0.6	16	LA
EKRLK4	13.1	13.5	13.3	13.8	13.4	-1.02	1.1	0.3	13.5	-0.89	1.2	0.5	16	LA
FBK7EV	12.8	13.4	13.7	13.1	13.3	-1.49	0.9	0.4	13.5	-0.95	1.0	0.4	16	LZ
G832HL	12.3 *	12.3 *	12.6 *	12.3 *	12.4	-3.61 X	1.0	0.2	12.3	-4.15 X	1.0	0.2	16	TT
GAJT7U	13.0	13.9	14.0	13.3	13.6	-0.74	0.9	0.5	12.9	-2.50 *	1.1	0.8	12	LH
HA2Y7J	14.4	14.3	15.7 X	15.2 *	14.9	2.39 *	1.1	0.6	14.4	1.71	1.2	0.7	8	LA
L4ZU3P	13.3	14.3	12.9	13.5	13.5	-0.90	1.1	0.6	13.6	-0.66	1.2	0.5	16	LA
LCAHFN	14.0	13.6	14.2	13.5	13.8	-0.15	1.0	0.3	13.8	0.02	1.1	0.5	16	LA
LFXUFU	13.2	13.2	13.8	13.4	13.4	-1.23	1.1	0.3	13.5	-0.93	1.0	0.3	16	LU
LT446P	14.2	13.9	14.5	14.4	14.2	0.86	1.2	0.3	13.7	-0.42	1.1	0.4	16	LU
LZJN7F	13.8 L	13.9 L	13.9 L	13.9 L	13.9	-0.04	0.4	0.1 L	13.7	-0.26	0.4	0.1 L	16	LA
PAYH9M	14.0	15.5 *H	13.9	14.0	14.3	1.11	1.2	0.8	15.2	3.84 X	1.2	2.8 H	16	LA
QC239R	13.4	12.9	13.8	13.3	13.4	-1.24	1.0	0.4	13.4	-1.06	1.0	0.6	16	LB
TM9NAN	13.5	13.8	13.4	13.5	13.5	-0.80	1.0	0.2	13.7	-0.38	1.0	0.4	16	TT
UKY2AN	14.5	13.8	13.8	13.7	13.9	0.15	1.2	0.4	14.1	0.88	1.4	0.4	16	LA
VBTGMM	13.8	14.8	14.0	14.0	14.1	0.62	1.0	0.4	14.4	1.53	1.1	0.5	16	LH
YLEUEE	13.7	13.3	13.4	13.2	13.4	-1.14	0.9	0.2	13.7	-0.22	0.9	0.4	16	LH

Consensus (All Labs) Results

Wk Mean	13.66	13.89	13.78	13.87	Month Mean	13.88	Grand Mean	13.80
Avg SDr	1.08	0.99	1.04	1.04	Avg SD	1.04	Avg SD	1.07
SD btwn Labs	0.60	0.66	0.53	0.64	SD btwn Labs	0.42	SD btwn Labs	0.36
Labs Incld	25	25	24	25	SD btwn Wks	0.45	SD btwn Wks	0.50
Labs Excld	0	0	1	0	Labs Incld	24	Labs Incld	23
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

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

End of Report