



Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #532 (A) - January 2014

[Introduction to the Containerboard Program](#)

[Explanation of Tables and Definitions of Terms](#)

Analysis	Sample Lot	Analysis Name
201	BOX8	Box Compression Strength, Corrugated Boxes
202	ECT7	Edgewise Compressive Strength, Wax (T811), Corrugated board
203	ECT7	Edgewise Compressive Strength by Clamp (T839), Corrugated board
205	42B3	Mullen Burst of Linerboard, 42 lb Linerboard
206	69C1	Mullen Burst of Linerboard, 69 lb Linerboard
215	42B3	Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard
216	69C1	Ring Crush of Linerboard, Rigid Platen Type, 69 lb Linerboard
223	42B3	STFI of Linerboard, 42 lb Linerboard
224	69C1	STFI of Linerboard, 69 lb Linerboard
228	69C	Roughness - Stylus Method, 69 lb Linerboard
231	36Z	Internal Bond Strength, Linerboard, 36 lb Linerboard
234	36Z	Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard
237	36Z	Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard
240	CM73	Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium
250	CM73	Fluted Crush of Medium, 26 lb Corrugating Medium
255	CM73	Ring Crush of Medium, 26 lb Corrugating Medium
261	CM73	STFI of Medium, 26 lb Corrugating Medium

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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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 69 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
36# Linerboard	36Z1 36Z2	June 2010 - December 2011 February 2012 -
42# Linerboard	42B2 42B3	June 2012 - April 2013 June 2013 -
69# Linerboard	69A2 69C1	January 2013 - September 2013 November 2013 -
Corrugating Medium	CM73	December 2012 -

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 analysis 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 SDr - For each week, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SDr 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 Incl - The number of laboratory Means included in the Wk Mean for that week.

Labs Excl - 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.

SDr - For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for all reported Weekly Means this month.

SD Wks - 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 SDr - For the current month, the average of the within-laboratory standard deviations (SDr'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 Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants.

Labs Incl - The number of laboratory Means included in the Month Mean.

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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 (SDr's) for the weeks shown.
- SD Wks- 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.

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 SDr - For the cumulative period, the average of the within-laboratory standard deviations (SDr'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 Wks - For the cumulative period, the average of the laboratory between week standard deviations for all the participants.
- Labs Incl - 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 required.
- *** 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 SDr for each week is not shown, but laboratory average SDr and consensus average SDr values are shown.
- L** Indicates low within-laboratory standard deviation. The laboratory SDr for each week is not shown, but laboratory monthly average SDr and consensus average SDr values are shown.

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

- H** Indicates high variability between weekly means (high week-to-week variation).
- L** Indicates low variability between weekly means (low week-to-week variation).

Containerboard Interlaboratory Testing Program
Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BOX8
TAPPI Official Test Method T804



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2HVALE	824.4	0.42	16.6	824.4	0.42	16.6	1	ER
3ZP6GW	715.8	-1.13	46.7	715.8	-1.13	46.7	1	LG
4X2RQR	916.7	1.74	68.0	916.7	1.74	68.0	1	LH
89LXQJ	888.7	1.34	14.8	888.7	1.34	14.8	1	LM
92NYZ3	887.2	1.32	16.4	887.2	1.32	16.4	1	TE
A9DVTA	789.0	-0.08	35.3	789.0	-0.08	35.3	1	ER
AP326A	776.4	-0.26	57.3	776.4	-0.26	57.3	1	ES
BTFFG2	875.0	1.14	36.7	875.0	1.14	36.7	1	LH
C238RY	729.9	-0.93	12.1	729.9	-0.93	12.1	1	TR
G4JZG4	815.2	0.29	67.8	815.2	0.29	67.8	1	LG
GEV7XJ	721.6	-1.04	39.2	721.6	-1.04	39.2	1	TO
HEEPKH	826.8	0.45	12.0	826.8	0.45	12.0	1	LG
JFN83E	704.2	-1.29	53.9	704.2	-1.29	53.9	1	LL
PBAFGT	766.6	-0.40	98.9	766.6	-0.40	98.9	1	ER
TVNMFY	816.5	0.31	32.3	816.5	0.31	32.3	1	LN
U766F3	723.5	-1.02	19.1	723.5	-1.02	19.1	1	LM
UERWHF	899.4	1.49	29.0	899.4	1.49	29.0	1	TS
UWBQ96	755.0	-0.57	65.9	755.0	-0.57	65.9	1	LS
VHG9HY	807.2	0.18	84.7	807.2	0.18	84.7	1	LG
YCWMZ3	776.0	-0.27	31.7	776.0	-0.27	31.7	1	TB
YYLVUZ	676.8	-1.68	47.6	676.8	-1.68	47.6	1	LO

Consensus (All Labs) Results			
Month Mean	794.85	Grand Mean	794.85
Avg SDr	48.60	Avg SDr	48.60
SD btwn Labs	70.24	SD btwn Labs	70.24
Labs Incd	21	Labs Incd	21

Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BOX8
TAPPI Official Test Method T804



Instrument Code List as Reported by the Labs

(ER) - Emerson 6200 Series

(LG) - TLS / L.A.B. Validator Series

(LL) - Lansmont 76-5K

(LN) - Lansmont 152-50k

(LS) - Lansmont Squeezer

(TE) - Testometric M500 - 25 KN

(TR) - Toyo Seiki Model RCT-5TU

(ES) - Emerson 8510

(LH) - L.A.B. Compression Tester Model #10610

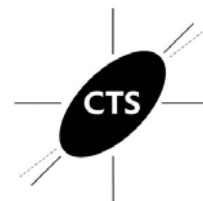
(LM) - Lansmont 122-15k

(LO) - Lansmont 152-30k

(TB) - TMI Monitor/Compression Tester, Model 17-70

(TO) - Tinius Olsen Model not specified

(TS) - Tinius Olsen Model CTM



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
84D9CN	36.1	-1.12	1.1	36.7	-0.91	1.5	4	LC
8BRVB8	34.7	-1.62	2.2	36.7	-0.92	2.9	4	TD
BTFFG2	36.0	-1.13	0.7	34.8	-1.68	1.4	4	TC
E8VJN9	41.8	0.98	1.6	41.2	0.83	2.8	4	XX
G4JZG4	42.6	1.24	2.0	43.1	1.60	1.9	4	LC
GEHN4E	39.8	0.24	0.4	38.8	-0.09	0.8	4	PC
TVNMFY	41.4	0.82	1.4	41.6	0.99	1.4	4	EN
UTFWQV	39.8	0.22	0.2	39.2	0.05	1.0	3	WK
UWBQ96	41.0	0.68	1.4	40.2	0.44	1.3	4	PC
XK7F84	38.3	-0.31	1.6	38.3	-0.30	1.6	1	TB

Consensus (All Labs) Results

Month Mean	39.15	Grand Mean	39.06
Avg SDr	1.41	Avg SDr	1.79
SD btwn Labs	2.75	SD btwn Labs	2.55
Labs Incd	10	Labs Incd	10

Instrument Code List as Reported by the Labs

(EN) - Emerson 2200

(PC) - Prensa Digital Crush Tester 2000

(TC) - TMI Monitor/Compression Tester, Model 17-37

(WK) - Zwick Z005 Crush Tester

(LC) - L&W Crush Tester 48

(TB) - TMI Monitor/Compression Tester, Model 17-70

(TD) - TMI Digital Crush Tester, Model 17-09

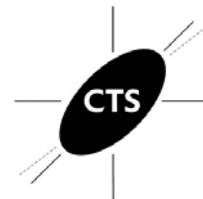
(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated board - ECT7
TAPPI T839



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2HVALE	43.7	1.38	1.6	42.3	0.23	1.5	4	EN
3DV76Z	42.3	0.32	1.5	41.9	-0.16	1.6	4	TL
3ZP6GW	40.4	-1.17	1.6	40.4	-1.51	1.6	4	TB
4NDXDA	40.7	-0.90	1.3	41.1	-0.92	1.5	4	TB
4X2RQR	43.5	1.26	2.1	42.0	-0.02	1.9	4	EM
64XPBT	42.0	0.09	1.8	41.7	-0.31	1.6	4	LD
84D9CN	42.3	0.37	1.4	43.4	1.27	1.3	4	LC
89LXQJ	41.5	-0.28	1.0	42.0	-0.02	1.1	4	TC
9AQ7AM	41.6	-0.21	1.4	41.7	-0.30	1.5	4	TM
A9DVTA	40.0	-1.43	1.1	41.1	-0.89	1.5	4	EM
AP326A	39.6	-1.76	2.7	41.3	-0.74	1.9	4	LD
BTFFG2	41.5	-0.29	1.0	40.9	-1.08	0.9	4	TC
BWGGGY	42.5	0.51	1.6	42.6	0.52	1.6	4	LC
FFKPWZ	43.6	1.30	1.1	43.3	1.19	0.9	3	LC
G4JZG4	42.8	0.73	2.4	41.9	-0.18	2.6	4	LC
GEHN4E	41.7	-0.10	0.6	41.4	-0.59	0.6	4	PC
H3KV42	36.5	-4.14 X	2.8	37.6	-4.16 X	2.2	4	LD
J6LZAZ	42.5	0.49	2.5	43.4	1.23	2.0	4	XX
JFN83E	40.6	-1.00	1.2	41.4	-0.63	1.5	4	LC
PBAFGT	43.8	1.50	1.1	43.7	1.54	1.2	4	LD
PJXWRA	42.0	0.11	1.3	41.9	-0.17	1.5	4	EX
T2RMNF	40.4	-1.13	2.2	37.7	-4.05 X	1.6	4	TK
TVNMFY	42.5	0.52	2.3	43.2	1.03	1.6	4	EN
U766F3	41.2	-0.52	1.4	42.2	0.15	1.4	4	EM
UERWHF	46.1	3.27 X	1.5	44.4	2.17*	1.3	4	CT
UWBQ96	41.6	-0.24	1.4	41.6	-0.43	1.5	4	PC
VHG9HY	41.1	-0.61	1.5	40.6	-1.32	2.0	4	EM
XK7F84	39.7	-1.71	1.3	40.8	-1.13	1.4	4	TG
YCWMZ3	44.2	1.79	0.6	43.7	1.53	0.6	4	LC
YJUBFG	43.2	1.05	1.0	42.0	0.00	1.2	4	TG
YYLVUZ	40.5	-1.09	1.6	40.3	-1.58	1.6	4	EN
Z9RXQK	43.2	1.01	2.3	43.2	1.11	1.8	4	LD

Containerboard Interlaboratory Testing Program
 Analysis 203
Edgewise Compressive Strength by T839, Corrugated board - ECT7
 TAPPI T839



Consensus (All Labs) Results

Month Mean	41.87	Grand Mean	42.05
Avg SDr	1.62	Avg SDr	1.53
SD btwn Labs	1.30	SD btwn Labs	1.08
Labs Incd	30	Labs Incd	30

Instrument Code List as Reported by the Labs

(CT) - Con-Ten	(EM) - Emerson 1200 Series
(EN) - Emerson 2200	(EX) - Emerson (model not specified)
(LC) - L&W Crush Tester 48	(LD) - L&W Crush Tester 248
(PC) - Pensa Digital Crusht Tester 2000	(TB) - TMI Monitor/Compression Tester, Model 17-70
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TG) - TMI Digital Crush Tester, 17-76
(TK) - TLS Compression Tester, Model 5184	(TL) - Tech-Lab Systems Compression
(TM) - TMI/Hinde & Dausch	(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42B3

TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
2CLBT2	104.6	104.4	99.8	100.0	102.2	-0.66	7.8	2.7	102.5	-0.63	9.2	1.9	16	LZ
2LULKZ	102.1	102.8	103.7	98.0	101.7	-0.79	9.8	2.5	103.9	-0.24	10.4	3.5	16	AX
3J2Q36	103.6	107.3	105.8	106.4	105.8	0.20	9.1	1.6	108.1	0.91	12.5	6.2 H	16	LJ
3ZP6GW	100.0	98.2	100.6	97.1	99.0	-1.44	7.9	1.6	99.8	-1.35	9.4	2.1	15	LA
4G9N3M	110.2	114.8	111.8	111.2	112.0	1.70	10.5	2.0	105.6	0.23	9.0	4.9	16	AH
4LPN6U	99.9	99.4	96.4	100.6	99.1	-1.41	9.2	1.9	99.4	-1.47	8.6	2.5	16	XX
4QVNGC	106.8 L	107.3 L	107.2	107.4	107.2	0.54	4.6	0.2 L	107.7	0.81	5.2	2.7	16	LA
64XPBT	105.5	105.1	106.6	110.2	106.8	0.45	10.3	2.3	108.3	0.97	9.1	3.1	16	TB
78WDJM	113.6 *	111.5	109.0	116.9 *	112.8	1.88	11.9	3.3	110.7	1.62	11.9	3.7	16	LA
7RN8LB	104.1	98.9	106.6	108.3	104.5	-0.11	10.9	4.1	104.0	-0.20	10.0	3.9	15	LC
92NYZ3	100.4 L	99.8 L	No Data	No Data	100.1	-1.16	1.6	0.4 L	100.1	-1.27	3.8	0.3 L	4	AH
9ABQWL	104.3	107.0	101.6	104.7	104.4	-0.13	10.1	2.2	102.6	-0.60	10.5	3.1	8	LC
9X6M3D	103.7	105.7	101.7	103.9	103.8	-0.28	8.0	1.6	103.6	-0.32	7.3	1.5	16	LC
AP326A	99.3	107.0	105.7	99.1	102.8	-0.52	10.4	4.1	102.9	-0.51	10.5	3.2	16	LA
BTFFG2	113.8 *	111.8	109.8	106.5	110.4	1.33	12.0	3.1	106.4	0.45	11.0	3.2	16	AA
BWB2TH	106.8	103.9	No Data	105.0	105.2	0.06	10.5	1.5	102.6	-0.59	11.2	2.2	15	LA
ERVVZM	104.6	106.2	104.4	108.4	105.9	0.23	10.2	1.8	103.4	-0.39	9.9	3.3	16	LJ
G4JZG4	106.1	114.2	112.3	105.6	109.5	1.11	9.8	4.3	108.9	1.13	10.8	3.2	16	LZ
G6LQYX	107.4	108.7	109.9	110.9	109.2	1.03	5.1	1.5	109.2	1.20	4.7	1.2	16	XX
GEMZQA	133.3 X	120.0 *	120.6 X	108.4	120.6	3.77 X	12.0	10.2 H	119.6	4.05 X	12.1	7.5 H	8	XX
H3HRJ4	106.5	106.3	101.4	100.9	103.7	-0.29	11.5	3.0	103.6	-0.33	10.0	2.9	16	LC
H3KV42	101.3	105.0	108.3	110.0	106.2	0.29	9.7	3.8	106.7	0.52	10.1	3.3	16	AA
H3XMUX	106.0	104.8	101.5	95.7	102.0	-0.71	8.4	4.6	106.5	0.47	8.3	7.6 H	16	LC
HEEPKH	106.4	105.6	105.2	105.1	105.6	0.15	9.5	0.6	105.8	0.27	9.6	1.9	16	AH
HY8X9L	99.3	97.6	99.6	108.0	101.1	-0.92	9.4	4.7	100.6	-1.14	9.7	5.1	15	LC
J6LZAZ	96.1 *	91.9 *	97.3	97.8	95.8	-2.20 *	10.7	2.7	96.6	-2.24 *	10.8	2.5	16	LA
JBA2DE	112.7	118.4 *H	112.7	115.6	114.8	2.38 *	12.6	2.7	108.4	0.98	12.8	6.8 H	16	LC
K3RK83	99.4	89.3 X	96.6	99.5	96.2	-2.10 *	10.2	4.8	97.4	-2.01 *	10.5	5.7 H	8	TB
KXYEVL	109.5	113.2	108.8	116.8 *	112.1	1.72	10.2	3.7	110.9	1.66	10.8	2.9	15	LA
LNK7X2	99.4	100.3	98.8	101.6	100.0	-1.18	9.5	1.2	99.6	-1.40	9.3	2.5	16	LA
LTPF29	109.9	113.8	110.9	109.1	110.9	1.44	8.4	2.1	113.1	2.26 *	8.9	6.5 H	16	TB
M4YNR6	102.1	106.8	105.5	104.7	104.8	-0.04	8.7	2.0	105.4	0.16	9.0	2.2	15	LA
MRAFHJ	96.9	No Data	100.7	103.4	100.3	-1.11	10.6	3.3	103.0	-0.49	10.2	2.8	15	TB
NALM7K	105.0	105.5	105.0	105.8	105.3	0.09	10.9	0.4 L	105.1	0.09	10.5	3.4	13	LA
PBAFGT	104.7	105.0	99.4	102.9	103.0	-0.47	8.4	2.6	102.7	-0.57	10.4	3.9	16	AH

Containerboard Interlaboratory Testing Program
 Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42B3
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
PQZKKG	103.8	104.4	104.3	104.9	104.4	-0.14	12.8	0.5 L	103.1	-0.46	10.6	2.3	16	LC
REM24X	101.4	106.0	101.5	106.8	103.9	-0.24	11.1	2.9	104.0	-0.20	10.6	2.8	16	AH
RVNTY8	101.1	96.0	106.0	107.6	102.7	-0.54	9.3	5.2	102.6	-0.59	9.2	3.0	16	LC
U766F3	100.3	99.6 L	105.0	102.6	101.9	-0.73	7.5	2.4	100.4	-1.18	7.5	2.3	16	AH
UERWHF	110.3	105.7	97.2 H	96.8	102.5	-0.59	13.7	6.6 H	103.0	-0.49	12.9	5.0	16	XX
UWBQ96	101.6	105.9	113.0	109.9	107.6	0.64	10.7	4.9	108.8	1.09	12.1	3.1	16	AH
VEQXWQ	106.9	102.3	107.7	107.8	106.2	0.30	11.2	2.6	107.1	0.64	10.2	3.1	16	LZ
VFTY8C	104.4	106.2	104.6	102.9	104.5	-0.10	7.5	1.4	105.0	0.07	7.1	1.0	16	AH
VJQ3WQ	111.3 H	106.8	108.9	110.2	109.3	1.04	11.2	1.9	110.4	1.54	11.5	2.5	16	LC
WDJ9G9	105.2	106.3	102.8 L	108.5	105.7	0.18	7.2	2.4	106.1	0.35	7.5	2.0	16	TB
X2JKYQ	107.5	105.7	106.1	100.7	105.0	0.02	12.1	3.0	104.7	-0.03	10.9	2.1	16	LA
YQXVJH	109.6	107.8	105.7	111.4	108.6	0.89	11.5	2.4	109.8	1.36	9.7	2.3	16	TB
ZEWUDR	105.4 L	104.7 L	106.0 L	106.3	105.6	0.16	5.6	0.7	104.5	-0.07	4.5	1.5	16	AH

Consensus (All Labs) Results									
Wk Mean	104.69	105.77	104.73	105.57	Month Mean	104.93	Grand Mean	104.77	
Avg SDr	9.62	10.25	9.95	9.82	Avg SDr	9.83	Avg SDr	9.80	
SD btwn Labs	4.27	5.49	4.46	5.08	SD btwn Labs	4.15	SD btwn Labs	3.66	
Labs Includ	47	46	45	47	SD btwn Wks	2.95	SD btwn Wks	3.50	
Labs Exclud	1	1	1	0	Labs Includ	47	Labs Includ	47	
Labs not rcvd	0	1	2	1					

Instrument Code List as Reported by the Labs

- (AA) - Perkins Model A
- (AX) - Perkins Mullen Tester (model not specified)
- (LC) - L & W Autoline
- (LZ) - L & W (model not specified)
- (XX) - Instrument make/model not specified by lab
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LJ) - L & W Bursting Strength Tester J-Type
- (TB) - TMI Monitor/Burst 1000



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
2CLBT2	157.1	153.8	153.7	151.1	153.9	-0.69	12.2	2.4	153.5	-0.93	13.2	2.6	8	LZ
2LULKZ	155.4	153.8	167.2	154.0	157.6	-0.04	10.4	6.4	159.2	0.33	10.3	5.8	8	AX
3J2Q36	153.5	162.2	155.8	152.5	156.0	-0.33	10.2	4.4	158.3	0.11	11.9	4.1	8	LJ
3ZP6GW	154.2	148.2	153.6	157.2	153.3	-0.81	13.6	3.8	153.0	-1.03	12.6	3.9	7	LA
4G9N3M	159.4	157.2	156.8	157.6	157.8	-0.02	11.4	1.1	155.4	-0.51	12.6	3.1	8	AH
4LPN6U	151.6	147.3	145.8	142.1 *	146.7	-1.97	10.2	4.0	147.5	-2.22 *	10.0	3.0	8	XX
4QVNGC	167.8 L	168.9 L	167.1 L	167.8	167.9	1.78	5.1	0.7 L	165.4	1.68	5.6	3.2	8	LA
64XPBT	157.1	162.0	161.8	157.7	159.7	0.32	9.8	2.6	160.7	0.64	8.8	2.9	8	TB
78WDJM	169.6	168.7	170.9	162.4	167.9	1.78	11.1	3.8	167.7	2.18 *	11.4	4.4	8	LA
7RN8LB	156.4	159.2	158.7	162.4	159.2	0.23	11.8	2.5	156.6	-0.25	11.3	3.6	8	LC
92NYZ3	156.7	157.9	No Data	No Data	157.3	-0.10	5.5	0.8	156.3	-0.32	7.6	2.0	4	AH
9ABQWL	148.8	153.9	157.7	155.2	153.9	-0.70	9.7	3.7	152.8	-1.08	11.5	2.9	8	LC
9X6M3D	149.5	162.8	153.0	151.5	154.2	-0.64	11.8	5.9	159.2	0.31	17.6	6.6 H	8	LC
AP326A	154.6	155.4	156.1	156.2	155.6	-0.40	12.3	0.7 L	155.0	-0.59	13.4	4.1	8	LA
BTFFG2	164.8	162.8	159.3	163.0	162.4	0.81	12.4	2.3	157.9	0.05	10.7	6.1 H	8	AA
BWB2TH	157.8	152.2	151.6	153.2	153.7	-0.73	10.7	2.8	153.6	-0.91	12.3	2.6	8	LA
ERVVZM	168.0	155.1	157.6	153.8	158.6	0.14	13.2	6.5	161.4	0.80	12.9	5.4	8	LJ
G4JZG4	162.9	164.6	162.4	155.9	161.4	0.64	12.1	3.8	160.0	0.49	12.3	3.4	8	LZ
G6LQYX	156.4 L	158.6	155.4	156.2	156.7	-0.21	5.3	1.4	156.6	-0.26	5.3	1.0	8	XX
GEMZQA	196.0 X	152.8	175.0 *	166.5	172.6	2.61 *	12.5	18.1 H	172.6	3.24 X	12.5	18.1 H	4	XX
H3HRJ4	159.6 H	162.3	155.9	147.6	156.4	-0.27	15.8	6.4	154.9	-0.61	13.9	4.7	8	LC
H3KV42	155.7	156.5	154.9	162.3	157.4	-0.09	12.6	3.4	159.6	0.41	12.7	4.3	8	AA
H3XMUX	159.7	162.5	159.3	154.6	159.0	0.21	12.1	3.3	161.9	0.90	13.5	4.5	8	LC
HEEPKH	163.9	167.6	156.7	161.5	162.4	0.81	10.2	4.6	161.8	0.88	10.6	4.3	8	AH
HY8X9L	151.4	151.4	146.1	151.1	150.0	-1.39	12.9	2.6	150.6	-1.55	11.5	2.5	8	LC
J6LZAZ	143.1 *	150.1	149.8	154.3	149.3	-1.51	13.2	4.6	150.9	-1.48	12.9	3.7	8	LA
JBA2DE	165.3	164.2	166.1	160.1	163.9	1.07	14.5	2.7	158.0	0.06	13.1	6.5 H	8	LC
K3RK83	147.6	133.6 X	143.5 *	145.6	142.6	-2.70 *	11.0	6.2	142.6	-3.30 X	11.0	6.2 H	4	TB
KXYEVL	164.4	167.7	163.0	170.1 *	166.3	1.50	11.8	3.2	165.8	1.76	11.3	2.3	7	LA
LNK7X2	153.1	152.8	161.7	155.6	155.8	-0.36	9.8	4.1	154.5	-0.71	10.9	3.2	8	LA
LTPF29	168.2	168.9	165.1	169.4 *	167.9	1.77	11.0	1.9	169.0	2.45 *	9.6	2.5	8	TB
M4YNR6	153.2	153.9	142.9 *	150.9	150.2	-1.35	10.7	5.1	152.6	-1.13	11.9	5.1	7	LA
MRAFHJ	154.8	No Data	155.8	154.6	155.1	-0.50	8.1	0.7 L	156.5	-0.26	13.4	2.2	7	TB
NALM7K	156.3	158.3	158.0	159.3	158.0	0.03	9.7	1.3	156.2	-0.33	12.4	2.7	7	LA
PBAFGT	156.3	155.2	161.7	160.8	158.5	0.12	10.7	3.2	155.0	-0.60	11.1	4.6	8	AH



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
PQZKKG	146.1	152.3	151.5	161.1	152.8	-0.90	11.9	6.2	152.4	-1.16	11.4	4.4	8	LC
REM24X	159.5	158.5	162.9	154.6	158.9	0.18	11.8	3.4	158.1	0.09	12.3	2.8	8	AH
RVNTY8	157.2	158.0 ^H	154.2	149.5	154.7	-0.56	14.7	3.8	154.2	-0.77	14.7	2.7	8	LC
U766F3	162.8	157.6	155.2	158.0	158.4	0.10	11.7	3.2	158.3	0.13	10.9	2.7	8	AH
UERWHF	159.3	154.4	158.4	156.2	157.1	-0.14	10.3	2.2	157.4	-0.07	11.9	3.2	8	XX
UWBQ96	158.9	164.3	167.1	157.0	161.8	0.70	10.5	4.7	163.8	1.33	12.3	4.1	8	AH
VEQXWQ	157.6	152.8	152.5	160.0	155.7	-0.38	11.6	3.7	158.2	0.11	13.3	4.2	8	LZ
VFTY8C	163.0	160.5	156.9	155.8	159.1	0.21	8.8	3.3	157.7	-0.01	8.0	3.0	8	AH
VJQ3WQ	159.9	158.9	157.7	161.3	159.5	0.29	11.9	1.5	159.4	0.36	11.5	1.4	8	LC
WDJ9G9	163.4	153.5	160.3	157.7	158.7	0.16	10.3	4.2	160.4	0.58	10.0	3.9	8	TB
X2JKYQ	159.8	157.1	155.4	155.0	156.8	-0.18	10.8	2.2	155.9	-0.40	10.9	2.2	8	LA
YQXVJH	167.5	172.7 [*]	165.9	162.8	167.2	1.66	9.3	4.2	166.4	1.89	10.6	3.6	8	TB
ZEWUDR	157.0	157.2	153.8	160.4	157.1	-0.13	8.1	2.7	156.0	-0.38	7.6	2.7	8	AH

Consensus (All Labs) Results

Wk Mean	158.00	158.40	157.70	157.09	Month Mean	157.85	Grand Mean	157.73
Avg SDr	11.35	10.72	11.52	11.29	Avg SDr	11.19	Avg SDr	11.63
SD btwn Labs	6.01	5.94	6.69	5.75	SD btwn Labs	5.65	SD btwn Labs	4.59
Labs Includ	47	46	47	47	SD btwn Wks	4.51	SD btwn Wks	3.79
Labs Exclud	1	1	0	0	Labs Includ	48	Labs Includ	46
Labs not rcvd	0	1	1	1				

Instrument Code List as Reported by the Labs

(AA) - Perkins Model A

(AX) - Perkins Mullen Tester (model not specified)

(LC) - L & W Autoline

(LZ) - L & W (model not specified)

(XX) - Instrument make/model not specified by lab

(AH) - Perkins Model AH

(LA) - L & W Bursting Strength Tester

(LJ) - L & W Bursting Strength Tester J-Type

(TB) - TMI Monitor/Burst 1000



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
2CLBT2	103.2	95.8	103.8	106.7	102.4	-0.03	3.8	4.6	99.9	-0.28	4.2	4.4	16	LC
2HVALE	97.6	95.8	98.0	100.3	97.9	-1.01	3.2	1.8	97.0	-0.93	3.3	1.8	16	EN
2LULKZ	103.8	105.8	100.6	103.9	103.5	0.22	3.1	2.1	102.5	0.32	3.8	2.3	16	LX
3J2Q36	99.3	98.1	97.0	97.8	98.0	-0.98	3.8	1.0	96.5	-1.03	4.4	2.1	16	LC
4G9N3M	108.4	106.4H	105.5	108.8	107.3	1.04	5.2	1.6	107.6	1.45	5.3	2.7	16	LC
4LPN6U	113.1*	112.1	111.9*	115.9*	113.2	2.36*	3.9	1.9	110.3	2.06*	3.8	5.7	16	LZ
4QVNGC	101.5	102.8	101.5	101.8	101.9	-0.13	2.8	0.6	101.6	0.12	2.2	1.2	16	LZ
4X2RQR	107.2	106.5	104.1	103.3	105.3	0.60	4.4	1.9	107.5	1.43	3.8	2.5	16	EM
64XPBT	105.2	103.3	103.1	101.2	103.2	0.15	2.5	1.6	102.8	0.38	2.9	1.6	16	LD
78WDJM	109.2	109.3	108.5	109.9	109.2	1.47	2.6	0.6L	109.8	1.96	5.8	1.9	16	LD
7RN8LB	104.3	105.9H	107.8	106.7	106.2	0.81	4.5	1.5	106.8	1.28	4.0	2.8	15	LC
8BRVB8	97.0	96.3	96.5	95.0	96.2	-1.38	2.7	0.8	96.8	-0.97	2.9	1.8	16	TD
92NYZ3	101.4	99.7L	101.9	102.7	101.4	-0.24	2.5	1.3	100.3	-0.19	2.6	1.1	12	LD
9ABQWL	106.8	107.3	107.7	106.5	107.1	1.00	2.6	0.6L	104.7	0.80	3.2	4.7	8	LD
9X6M3D	98.5	99.6	98.5	102.5	99.8	-0.60	3.0	1.9	98.1	-0.67	3.0	2.0	16	LC
A9DVTA	92.4*	94.1	94.0	93.4	93.5	-1.99	3.4	0.8	93.4	-1.73	3.1	1.4	16	EM
BWB2TH	106.0	109.4	110.1	109.5	108.8	1.37	3.7	1.9	107.5	1.43	4.1	3.4	16	LD
CBEBMJ	101.6H	81.7XH	82.0XH	80.9XH	86.6	-3.51X	12.6	10.0H	94.0	-1.60	12.5	8.5H	12	MB
DAHMDM	99.6	98.4	98.8	98.7	98.9	-0.80	3.6	0.5L	98.3	-0.64	3.5	1.2	16	XX
DKKTF2	105.2	106.2	98.6	101.0	102.7	0.05	3.2	3.6	104.0	0.65	3.4	2.3	16	LD
EF3KH9	94.4	98.1	100.8	113.6	101.7	-0.18	4.1	8.3H	99.6	-0.35	4.1	5.9	13	LC
ERVVZM	100.7	98.2	103.3	101.4	100.9	-0.35	4.1	2.1	100.6	-0.12	4.2	1.9	15	LD
FH6LGK	103.0	101.9	99.8	104.7	102.4	-0.03	3.3	2.1	102.8	0.37	3.5	2.8	16	EM
G4JZG4	102.8	101.4	103.5	103.5	102.8	0.06	2.8	1.0	104.0	0.65	2.7	2.3	16	LC
G6LQYX	106.4	99.4	106.9	109.6	105.6	0.67	4.0	4.4	104.0	0.64	4.0	4.0	16	XX
GEMZQA	113.2*	111.7	108.7	110.6	111.1	1.88	4.0	1.9	114.8	3.07X	4.2	5.2	8	LC
H3HRJ4	113.8*	109.8	108.6	110.8	110.8	1.81	4.9	2.2	104.2	0.68	4.9	5.7	16	LC
H3KV42	99.9	92.1	97.2	99.4	97.1	-1.19	2.4	3.6	97.6	-0.79	3.6	2.6	16	LD
HY3KGJ	105.5	104.7	104.8	104.7	104.9	0.53	3.4	0.4L	103.8	0.61	3.0	1.3	16	LC
HY8X9L	110.6	105.7	108.2	109.8	108.6	1.34	3.2	2.2	105.4	0.96	3.5	3.7	15	LD
J6LZAZ	98.1	99.8	92.6*	85.0X	93.9	-1.90	4.3	6.7H	94.4	-1.51	4.1	3.4	16	LX
JBA2DE	105.0	110.4	106.2H	114.6*	109.0	1.43	5.7	4.4	107.5	1.44	4.6	3.2	16	TC
JW9TPQ	101.3	100.8	100.0	99.9	100.5	-0.44	3.8	0.7	99.1	-0.46	3.6	1.9	13	LD
K3RK83	106.8	79.5XH	106.6L	108.6	100.4	-0.47	5.4	14.0H	99.4	-0.38	6.0	13.6H	8	LC
KXYEVL	104.7	105.5	97.3	103.0	102.6	0.03	3.2	3.7	101.6	0.11	3.5	2.8	15	LZ

Containerboard Interlaboratory Testing Program
Analysis 215

Ring Crush, 42 lb Linerboard - 42B3
TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
LNX7X2	102.2	99.7	99.2	100.2	100.3	-0.48	3.1	1.3	98.5	-0.59	3.1	2.3	15	LC
LTPF29	103.9	104.2	106.1	107.7	105.5	0.65	5.4	1.8	105.7	1.02	4.0	2.0	16	LX
MRAFHJ	101.0	No Data	104.7	102.8	102.8	0.07	3.9	1.9	100.1	-0.22	4.9	7.6 H	15	LZ
MVLP4L	88.3 X	87.7 *	No Data	No Data	88.0	-3.19 X	3.6	0.4 L	91.1	-2.25 *	4.1	5.8	5	LZ
NALM7K	99.6	99.5	99.7	No Data	99.6	-0.64	4.2	0.1 L	98.7	-0.55	3.6	1.9	12	LD
PBAFGT	102.4	102.3	105.7	102.6	103.3	0.16	2.7	1.6	101.3	0.04	3.3	2.4	16	LD
PBWAF7	103.4	99.3	104.5	99.6	101.7	-0.18	4.1	2.6	107.2	1.36	4.4	4.7	16	MB
RVNTY8	108.5	110.9 H	109.0 H	109.0 H	109.4	1.51	7.8	1.1	104.0	0.65	8.6	4.2	16	LA
T2RMNF	98.3	98.9 L	99.6	99.2	99.0	-0.77	2.3	0.5 L	99.1	-0.46	2.7	0.7 L	16	MB
U766F3	95.8	92.7 L	94.8	97.0 L	95.1	-1.63	2.0	1.8	94.7	-1.42	2.5	1.5	16	EM
UWBQ96	99.7	102.8	99.2	98.3	100.0	-0.56	2.6	1.9	99.9	-0.26	3.1	1.6	16	LC
VHG9HY	99.4	99.7	101.2	104.6	101.2	-0.29	4.0	2.4	98.9	-0.50	3.8	2.8	16	EM
WDJ9G9	100.4	101.6	100.6	103.6	101.6	-0.21	3.3	1.5	101.6	0.12	3.2	2.2	16	TH
X2JKYQ	96.6	95.1	95.6	94.0	95.3	-1.58	3.4	1.1	95.6	-1.25	3.6	2.3	16	LC
YJUBFG	98.8	97.6	98.6	99.4	98.6	-0.86	3.2	0.7	95.0	-1.36	3.0	3.1	16	TH
YQXVJH	100.9	101.4	99.3	98.6	100.1	-0.54	4.4	1.3	99.3	-0.39	4.2	2.5	16	LC
YYLVUZ	106.3	106.6	103.6	No Data	105.5	0.65	3.0	1.6	104.9	0.86	3.3	2.6	15	LZ
ZEWUDR	95.2	100.0	103.9 H	103.3	100.6	-0.42	4.4	4.0	98.8	-0.51	3.7	2.8	16	LC

Consensus (All Labs) Results

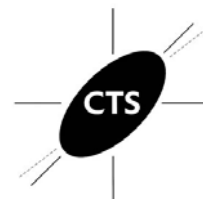
Wk Mean	102.69	101.84	102.30	103.74	Month Mean	102.51	Grand Mean	101.11
Avg SDr	3.97	3.52	3.62	3.98	Avg SDr	3.81	Avg SDr	4.27
SD btwn Labs	4.79	5.42	4.57	5.28	SD btwn Labs	4.55	SD btwn Labs	4.46
Labs Includ	52	50	51	48	SD btwn Wks	3.20	SD btwn Wks	3.83
Labs Exclud	1	2	1	2	Labs Includ	51	Labs Includ	52
Labs not rcvd	0	1	1	3				

Instrument Code List as Reported by the Labs

- (EM) - Emerson 1200
- (EN) - Emerson 2200
- (LA) - L&W Autoline
- (LC) - L & W Crush Tester 48
- (LD) - L&W Crush Tester 248
- (LX) - L & W 506
- (LZ) - L & W Crush Tester (model not specified)
- (MB) - Messmer Buchel K440
- (TC) - TMI Monitor/Compression Tester, Model 17-37
- (TD) - TMI Digital Crush Tester, Model 17-09
- (TH) - TMI Compression Tester, Model 17-76
- (XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
2CLBT2	132.6	122.4	137.4	135.7	132.0	-0.25	3.6	6.7	129.3	-0.61	4.0	6.3	8	LC
2HVALE	129.8	129.0	129.4	129.8	129.5	-0.61	4.6	0.4 L	127.1	-0.92	4.1	2.7	8	EN
2LULKZ	131.4	136.1	135.7	134.6	134.5	0.08	4.9	2.1	132.5	-0.15	4.2	3.9	8	LX
3J2Q36	133.9	134.3	136.7	135.0	135.0	0.15	3.3	1.3	132.6	-0.13	4.0	3.1	8	LC
4G9N3M	132.2	132.6	131.5	134.0	132.6	-0.18	5.3	1.1	130.4	-0.45	5.2	2.7	8	LC
4LPN6U	149.9*	144.5	146.5 H	144.0	146.2	1.71	4.7	2.7	143.0	1.34	4.5	4.2	8	LZ
4QVNGC	146.2	147.2	146.4	146.2	146.5	1.75	2.6	0.5 L	143.7	1.45	2.7	3.0	8	LZ
4X2RQR	140.8	141.5	138.4	138.7	139.8	0.82	3.9	1.5	137.5	0.57	3.6	4.6	8	EM
64XPBT	141.1 L	140.1	139.0	137.1	139.3	0.76	2.9	1.7	138.7	0.73	3.1	2.0	8	LD
78WDJM	138.5	139.7 L	137.3	139.0	138.6	0.65	2.7	1.0	137.6	0.57	3.1	3.2	8	LD
7RN8LB	145.1	150.4 L	144.4	142.4	145.6	1.62	3.4	3.4	143.2	1.38	3.6	3.7	8	LC
8BRVB8	149.7* L	148.5 L	145.8 L	145.7 L	147.4	1.88	1.4	2.0	147.9	2.05*	2.1	1.5	8	TD
92NYZ3	132.3	133.5	132.7	133.1	132.9	-0.14	4.7	0.5 L	137.9	0.62	5.2	6.0	8	LD
9ABQWL	145.3	145.3	141.0	142.2	143.5	1.33	3.6	2.2	142.2	1.23	3.6	3.4	8	LD
9X6M3D	133.7	137.9	139.8	136.5	137.0	0.43	2.6	2.6	140.9	1.04	2.9	4.5	8	LC
A9DVTA	126.9	124.1	126.4	125.0 L	125.6	-1.14	3.6	1.3	125.6	-1.13	3.5	1.3	8	EM
BWB2TH	134.4	134.0	133.2	136.1	134.4	0.08	3.0	1.2	130.8	-0.39	4.3	4.1	8	LD
CBEBMJ	131.4	122.2 H	111.9 XH	110.8 XH	119.1	-2.05*	12.5	9.7 H	136.5	0.42	14.6	19.9 H	8	MB
DAHMDM	129.2	131.0	133.7	130.7	131.1	-0.38	3.6	1.9	128.9	-0.66	3.6	2.7	8	XX
DKKTF2	129.6	128.2	127.8	128.7	128.6	-0.73	2.9	0.8 L	128.5	-0.72	3.9	1.1	8	LD
EF3KH9	107.6 X	111.4*	117.4*	138.6	118.7	-2.10*	4.1	13.8 H	115.7	-2.54*	4.0	9.9 H	8	LC
ERVVZM	132.8	129.7	135.6	132.8	132.7	-0.16	4.4	2.4	132.3	-0.18	4.2	2.3	8	LD
FH6LGK	139.5	137.5	137.9 L	138.9	138.4	0.63	3.3	0.9	132.9	-0.09	3.6	6.9	8	EM
G4JZG4	128.2	127.7	128.3	128.9	128.3	-0.78	2.9	0.5 L	128.4	-0.73	2.7	2.8	8	LC
G6LQYX	142.3	138.1	145.1 L	144.5	142.5	1.20	3.1	3.2	137.4	0.55	3.4	6.2	8	XX
GEMZQA	148.4	144.9	147.9	145.1	146.6	1.76	4.7	1.8	146.6	1.86	4.7	1.8	4	LC
H3HRJ4	157.6 X	153.0*	156.3*	156.0 X	155.7	3.03 X	5.0	2.0	144.7	1.59	5.3	12.0 H	8	LC
H3KV42	119.3*	119.3	121.3	118.2*	119.5	-1.99	2.7	1.3	119.8	-1.96	2.5	1.6	8	LD
HY8X9L	141.0	130.1	135.1	133.5	134.9	0.14	4.1	4.5	135.5	0.28	4.0	3.3	8	LD
J6LZAZ	117.7* L	126.4	119.7*	120.9*	121.2	-1.76	3.4	3.7	123.2	-1.48	4.1	3.3	8	LX
JBA2DE	137.8	137.7	147.3	140.3	140.8	0.95	4.7	4.5	142.1	1.22	4.3	3.4	8	TC
JW9TPQ	130.7	135.2	132.7	132.0	132.7	-0.17	3.7	1.9	133.0	-0.08	3.7	2.0	7	LD
K3RK83	134.8	110.3* H	145.9	144.9	134.0	0.01	9.2	16.6 H	134.0	0.06	9.2	16.6 H	4	LC
KXYEVL	136.3	135.3	134.3	133.5	134.9	0.13	5.4	1.2	131.7	-0.27	4.7	5.0	7	LZ
LN7X2	134.9	135.6	136.6	134.1	135.3	0.20	4.0	1.0	132.6	-0.13	4.2	2.9	8	LC



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
LTPF29	144.5	141.8	144.0	144.2	143.6	1.35	4.0	1.2	141.1	1.08	4.2	3.2	8	LX
MRAFHJ	134.3	No Data	139.7	137.6	137.2	0.46	3.4	2.7	136.3	0.39	3.9	2.6	7	LZ
MVLP4L	125.5	127.1	No Data	No Data	126.3	-1.05	4.2	1.2	124.7	-1.26	4.0	2.9	3	LZ
NALM7K	132.9	131.5	132.6	No Data	132.3	-0.21	3.6	0.7 L	132.4	-0.16	3.4	1.4	6	LD
PBAFGT	133.6	132.9	133.1	132.9	133.1	-0.10	2.8	0.3 L	134.0	0.07	3.6	1.4	8	LD
PBWA7F	140.3	133.1	141.7	126.5	135.4	0.21	3.8	7.1	136.3	0.39	4.1	5.8	8	MB
RVNTY8	124.6	130.5	137.2 H	128.3	130.1	-0.52	6.5	5.3	129.3	-0.61	6.5	4.3	8	LA
T2RMNF	131.9	131.1	130.1	130.8	131.0	-0.40	2.8	0.7 L	139.8	0.89	3.5	9.4 H	8	MB
U766F3	121.0	115.6	128.8	125.5	122.7	-1.55	2.8	5.7	123.4	-1.45	2.9	5.2	8	EM
UWBQ96	134.2	137.4	132.5	135.2	134.8	0.13	3.3	2.0	133.9	0.05	3.7	2.0	8	LC
VHG9HY	127.1	127.8	127.6	130.6	128.3	-0.77	3.0	1.6	128.7	-0.68	3.2	1.9	8	EM
WDJ9G9	132.6	131.2	133.7	137.3	133.7	-0.02	5.1	2.6	126.8	-0.97	5.9	7.9	8	TH
X2JKYQ	136.0	135.0	133.3	136.5	135.2	0.18	4.1	1.4	131.6	-0.28	4.7	4.3	8	LC
YJUBFG	123.3	120.6 L	122.1	122.4	122.1	-1.63	3.7	1.1	119.9	-1.95	3.6	2.5	8	TH
YQXVJH	133.9	133.8	134.6	126.6	132.2	-0.23	3.4	3.8	131.6	-0.27	3.6	4.0	8	LC
YYLVUZ	139.4 L	134.6	128.7	No Data	134.2	0.05	2.6	5.4	135.9	0.34	2.6	3.7	7	LZ
ZEWUDR	133.3	131.7 L	139.7	138.0	135.7	0.25	3.9	3.8	134.3	0.10	3.4	3.3	8	LC

Consensus (All Labs) Results

Wk Mean	134.53	133.14	135.68	134.74	Month Mean	133.88	Grand Mean	133.55
Avg SDr	3.90	4.81	3.90	3.59	Avg SDr	4.32	Avg SDr	4.55
SD btwn Labs	7.45	9.06	7.86	6.79	SD btwn Labs	7.22	SD btwn Labs	7.01
Labs Includ	50	51	50	47	SD btwn Wks	4.29	SD btwn Wks	5.67
Labs Exclud	2	0	1	2	Labs Includ	51	Labs Includ	52
Labs not rcvd	0	1	1	3				

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(LA) - L&W Autoline

(LD) - L&W Crush Tester 248

(LZ) - L & W Crush Tester (model not specified)

(TC) - TMI Monitor/Compression Tester, Model 17-37

(TH) - TMI Compression Tester, Model 17-76

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

(TD) - TMI Digital Crush Tester, Model 17-09

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
2CLBT2	23.8	21.4*	25.9	25.4	24.1	-0.68	2.5	2.0 H	23.3	-1.23	2.5	1.3	16	LW
2HVALE	23.9	24.1	23.8	23.2	23.7	-0.94	2.0	0.4	23.3	-1.26	2.0	0.6	16	LU
2LULKZ	21.5*	23.0	22.7	21.5*	22.1	-2.10*	1.9	0.8	22.1	-2.13*	1.9	0.8	4	XX
3KY3VR	24.8	24.4	25.3	24.0	24.6	-0.31	2.0	0.6	24.6	-0.18	2.0	0.6	4	LY
3ZP6GW	22.7	22.2	No Data	22.3	22.4	-1.92	1.9	0.2	22.5	-1.87	1.7	0.5	15	LU
4G9N3M	26.9	26.3	25.5	25.8	26.1	0.77	1.2	0.6	25.7	0.65	1.1	0.6	16	LY
4MYXBZ	24.8 L	25.5 L	24.6 L	25.4 L	25.1	0.01	0.0	0.5	25.3	0.40	0.0	1.2	16	LU
64XPBT	24.1	24.0	24.7	23.7	24.1	-0.65	1.5	0.4	23.6	-0.99	1.4	0.8	16	BK
7RN8LB	24.8 L	26.1 L	25.8 L	27.8 L	26.1	0.78	0.0	1.2	26.1	1.01	0.0	1.2	4	LA
92NYZ3	24.5	25.0	23.9	24.6	24.5	-0.40	2.0	0.5	24.6	-0.19	1.8	0.4	12	LY
9ABQWL	27.1 L	26.2 L	26.9 L	26.2 L	26.6	1.11	0.6	0.5	25.8	0.76	0.6	1.4	8	LA
9X6M3D	25.0 L	23.9 L	25.3 L	24.9 L	24.7	-0.22	0.4	0.6	24.8	-0.07	0.4	0.6	16	LA
CBEBMJ	28.1* L	27.0 L	27.1 L	26.6 L	27.2	1.55	0.6	0.6	27.2	1.88	0.6	0.8	12	BK
DAHMDM	24.0	24.4	23.4	25.4	24.3	-0.55	2.1	0.8	24.2	-0.49	2.1	0.6	16	XX
ERVVZM	26.2	25.2	24.8	24.5	25.2	0.09	2.5	0.7	24.9	0.06	2.2	0.7	16	LU
G4JZG4	25.4	25.2	25.0	24.1	24.9	-0.11	1.8	0.6	24.7	-0.09	2.0	0.6	16	LW
H3HRJ4	26.8 L	28.5* L	26.2 L	26.5	27.0	1.41	0.8	1.0	26.6	1.38	0.6	0.7	16	LA
H3KV42	24.0	25.2	24.1	24.2	24.4	-0.49	1.4	0.5	24.1	-0.55	1.7	0.5	16	LW
H3XMUX	25.0 L	24.4 L	25.6 L	23.7 L	24.7	-0.27	0.4	0.8	24.5	-0.27	0.4	0.6	16	LA
HEEPKH	23.8	23.9	23.7	23.9	23.8	-0.86	1.9	0.1 L	24.0	-0.68	2.2	0.5	16	LW
HY3KGJ	23.8	23.7	24.1	23.7	23.8	-0.88	2.2	0.2	23.7	-0.88	1.9	0.9	16	LU
HY8X9L	25.3	23.4	24.3	24.2	24.3	-0.55	2.6	0.8	24.4	-0.38	2.2	0.7	15	LZ
J6LZAZ	23.1	22.5	20.7 X	23.2	22.4	-1.92	1.8	1.2	22.7	-1.73	1.8	1.4	15	LU
JBA2DE	26.9 L	25.8 L	26.5 L	25.5 L	26.2	0.81	0.7	0.6	24.9	0.01	1.2	1.9 H	16	LA
KXYEVL	25.2	24.9	25.4	25.5	25.2	0.13	1.7	0.3	25.1	0.20	2.0	0.7	15	LW
LN7X2	24.7	24.8	24.7	24.4	24.7	-0.27	1.8	0.2	24.3	-0.46	1.8	0.5	16	LW
M4YNR6	26.8	27.4	26.7	26.9	27.0	1.39	2.3	0.3	25.1	0.17	2.3	2.7 H	11	LW
MRAFHJ	25.2	No Data	25.3	24.6	25.1	0.00	2.2	0.4	24.5	-0.26	1.9	0.5	15	LZ
MVLP4L	44.2 XL	42.3 XL	No Data	No Data	43.2	13.15 X	0.0	1.3	43.2	14.54 X	0.0	1.3	2	LZ
PBAFGT	25.4	25.0	24.7	25.0	25.0	-0.03	2.0	0.3	24.8	-0.01	1.9	0.4	16	LU
PBWA7	26.6 L	26.0 L	26.4 L	26.5 L	26.4	0.96	0.1	0.3	25.8	0.77	0.1	0.9	16	LA
PQZKKG	25.6	26.8	27.4	27.3	26.8	1.24	2.5	0.8	27.0	1.72	2.3	0.9	16	LA
REM24X	27.5	28.0	28.8*	27.1	27.9	2.03*	2.3	0.7	27.8	2.36*	2.2	1.0	16	LU
RVNTY8	25.8 L	27.0 L	25.1 L	26.1 L	26.0	0.69	0.5	0.8	26.0	0.89	0.5	0.8	16	LA
UWBQ96	24.1	24.5	25.5	25.6	24.9	-0.09	1.9	0.7	25.0	0.10	1.9	0.4	16	LU



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
VEQXWQ	27.3	26.5	26.7	26.3	26.7	1.20	2.4	0.5	25.7	0.65	2.3	1.4	16	LZ
VFTY8C	24.8	24.6	24.6	24.5	24.6	-0.30	1.2	0.1 L	24.6	-0.16	1.4	0.6	16	TT
VJQ3WQ	27.1	28.3	27.4	27.2	27.5	1.77	2.5	0.5	27.2	1.85	2.5	0.6	16	LA
WDJ9G9	24.2	24.1	24.0	24.3	24.1	-0.66	1.5	0.1	24.8	-0.06	1.5	2.2 H	16	TT
X2JKYQ	24.1	22.8	22.7	22.8	23.1	-1.41	2.0	0.7	23.6	-1.01	2.0	1.0	16	XX
YQXVJH	23.6	24.7	24.9	25.6	24.7	-0.26	1.7	0.8	25.0	0.16	2.0	0.6	16	LW
ZEWUDR	25.0	24.7	25.1	25.0	24.9	-0.09	1.1	0.1	24.8	-0.05	1.2	0.2	16	LW

Consensus (All Labs) Results

Wk Mean	25.10	25.02	25.24	24.99	Month Mean	25.04	Grand Mean	24.84
Avg SDr	1.72	1.73	1.81	1.77	Avg SDr	1.77	Avg SDr	1.75
SD btwn Labs	1.44	1.64	1.33	1.43	SD btwn Labs	1.38	SD btwn Labs	1.27
Labs Includ	41	40	39	41	SD btwn Wks	0.69	SD btwn Wks	1.00
Labs Exclud	1	1	1	0	Labs Includ	41	Labs Includ	41
Labs not rcvd	0	1	2	1				

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LU) - L & W 52 without moisture correction(was 53)

(LY) - L & W 152 without moisture correction

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(LA) - L & W Autoline

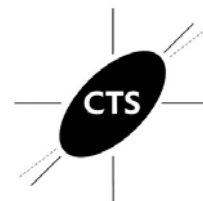
(LW) - L & W 53 with moisture correction (was 53M)

(LZ) - L & W (model not specified)

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
2CLBT2	31.9	32.0	36.1	31.4	32.9	0.02	2.0	2.2	31.8	-0.58	2.6	2.2	8	LW
2HVALE	32.7	33.4	33.1	32.9	33.0	0.09	2.1	0.3	33.1	0.15	2.0	0.4	8	LU
2LULKZ	26.0 X	26.7 X	26.8 X	28.1 *	26.9	-2.48 *	1.6	0.9	26.9	-3.30 X	1.6	0.9	4	XX
3KY3VR	32.7	32.0	32.5	31.2	32.1	-0.30	1.8	0.7	32.1	-0.40	1.8	0.7	4	LY
3ZP6GW	28.4 *	28.9 *	No Data	29.2	28.8	-1.68	1.5	0.4	28.9	-2.16 *	1.5	0.3	7	LU
4G9N3M	36.0	34.5	35.5	36.3	35.6	1.15	1.7	0.8	35.6	1.59	1.5	0.6	8	LY
4MYXBZ	31.4 L	30.4 L	30.7 L	30.4 L	30.7	-0.87	0.0	0.5	31.1	-0.93	0.0	0.7	8	LU
64XPBT	31.9	32.2	31.6	31.5	31.8	-0.43	1.6	0.3	31.6	-0.67	1.5	0.4	8	BK
7RN8LB	36.1 L	36.5 L	34.5 L	35.3 L	35.6	1.17	0.0	0.9	35.6	1.56	0.0	0.9	4	LA
92NYZ3	31.2	31.2	31.1	30.8	31.1	-0.73	1.5	0.2 L	34.4	0.88	3.0	3.6 H	8	LY
9ABQWL	36.9	35.4	34.6	34.8 L	35.4	1.10	0.7	1.0	34.2	0.81	0.6	1.7	8	LA
9X6M3D	30.4 L	31.2 L	31.3 L	31.0 L	31.0	-0.77	0.4	0.4	33.8	0.53	0.6	3.1 H	8	LA
CBEBMJ	35.9	35.5 L	36.9 L	36.9	36.3	1.47	0.7	0.7	36.3	1.95	0.7	0.7	8	BK
DAHMDM	32.7	32.2	31.7	33.2	32.4	-0.15	1.7	0.6	32.3	-0.31	1.6	0.6	8	XX
ERVVZM	33.2	33.4	32.6	34.1	33.3	0.22	1.7	0.6	33.6	0.45	1.8	0.7	8	LU
G4JZG4	31.5	31.5	32.4	32.0	31.8	-0.41	1.5	0.4	31.5	-0.74	1.5	0.9	8	LW
H3HRJ4	35.5 L	35.5 L	33.5 L	35.9 L	35.1	0.96	0.5	1.1	33.8	0.54	0.5	1.7	8	LA
H3KV42	31.9	32.3	31.6	32.3	32.0	-0.33	1.7	0.3	32.0	-0.47	1.6	0.3 L	8	LW
H3XMUX	32.0 L	32.4 L	31.9 L	31.1 L	31.8	-0.41	0.5	0.5	31.7	-0.60	0.5	0.7	8	LA
HEEPKH	29.4	30.9	30.7	30.9	30.5	-0.98	2.2	0.7	30.7	-1.18	2.0	0.5	8	LW
HY8X9L	32.3	31.5	31.5	31.6	31.7	-0.45	1.5	0.4	31.9	-0.52	1.6	0.4	8	LZ
J6LZAZ	32.2	29.6	13.8 X	31.8	26.8	-2.51 *	1.5	8.8 H	28.4	-2.45 *	1.5	6.0 H	8	LU
JBA2DE	37.7 *	36.4	34.4 L	34.4	35.7	1.21	0.8	1.6	32.1	-0.38	1.4	4.0 H	8	LA
KXYEVL	33.8	33.9	34.1	34.6	34.1	0.54	1.6	0.4	33.5	0.41	1.7	0.8	7	LW
LNK7X2	30.4	30.4	30.2	30.7	30.5	-0.99	1.6	0.2 L	30.2	-1.44	1.5	0.3	8	LW
M4YNR6	35.7	34.7	35.5	35.4	35.3	1.05	2.1	0.4	35.7	1.61	2.3	0.9	5	LW
MRAFHJ	32.8	No Data	32.4	31.3	32.2	-0.27	1.6	0.8	32.4	-0.22	1.6	2.4	7	LZ
MVLP4L	60.0 XL	60.4 XL	No Data	No Data	60.2	11.47 X	0.0	0.2 L	60.2	15.29 X	0.0	0.2 L	2	LZ
PBAFGT	30.5	31.3	31.5	30.5	31.0	-0.78	1.6	0.5	31.1	-0.97	1.7	0.5	8	LU
PBWA7	35.0 L	35.6 L	36.0 L	34.9 L	35.4	1.07	0.1	0.5	34.5	0.96	0.1	1.1	8	LA
PQZKKG	34.0	35.5	36.2	37.6 *	35.8	1.26	2.0	1.5	34.6	0.98	2.0	1.8	8	LA
REM24X	33.8	36.2	35.6	35.6	35.3	1.04	1.6	1.1	34.6	1.01	1.7	1.5	8	LU
RVNTY8	33.6 L	32.9 L	32.4 L	32.4 L	32.8	-0.01	0.5	0.6	32.4	-0.23	0.5	0.7	8	LA
UWBQ96	31.0	32.1	32.2	32.1	31.8	-0.40	1.3	0.6	31.6	-0.67	1.4	0.5	8	LU
VEQXWQ	36.4	32.8	34.7	33.8	34.4	0.68	2.2	1.6	33.4	0.34	2.0	1.5	8	LZ



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
VFTY8C	34.8	33.8	33.9	34.5	34.2	0.60	1.3	0.5	33.9	0.62	1.3	0.7	8	TT
VJQ3WQ	35.2	36.1	35.4	34.7	35.4	1.07	1.5	0.6	34.4	0.90	1.7	1.1	8	LA
WDJ9G9	33.7	34.9	33.2	33.0	33.7	0.36	1.6	0.9	33.3	0.26	1.5	0.8	8	TT
X2JKYQ	30.5	31.3	30.6	30.0	30.6	-0.93	1.4	0.5	31.4	-0.76	1.6	1.3	8	XX
YQXVJH	32.0	31.8	31.2	32.9	32.0	-0.35	1.7	0.7	32.2	-0.34	1.9	0.7	8	LW
ZEWUDR	35.7	35.5	35.4	35.7	35.6	1.16	1.1	0.1 L	33.6	0.46	1.5	2.1	8	LW

Consensus (All Labs) Results										
Wk Mean	33.14	33.10	33.20	32.92	Month Mean	32.81		Grand Mean	32.80	
Avg SDr	1.53	1.45	1.57	1.45	Avg SDr	1.50		Avg SDr	1.60	
SD btwn Labs	2.24	2.09	1.92	2.26	SD btwn Labs	2.39		SD btwn Labs	1.79	
Labs Includ	39	38	37	40	SD btwn Wks	1.60		SD btwn Wks	1.74	
Labs Exclud	2	2	2	0	Labs Includ	40		Labs Includ	39	
Labs not rcvd	0	1	2	1						

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

(LU) - L & W 52 without moisture correction (was 53)

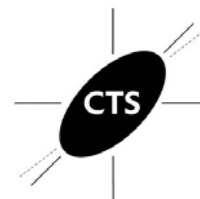
(LW) - L & W 53 with moisture correction (was 53M)

(LY) - L & W 52 with moisture correction

(LZ) - L & W (model not specified)

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(XX) - Instrument make/model not specified by lab



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2CLBT2	169.1	0.83	14.1	169.1	0.83	14.1	1	EV
2HVALE	149.5	0.25	17.3	149.5	0.25	17.3	1	EV
3ZP6GW	142.1	0.03	9.6	142.1	0.03	9.6	1	EV
4G9N3M	100.7	-1.19	6.8	100.7	-1.19	6.8	1	EV
78WDJM	226.8	2.53 *	106.9	226.8	2.53*	106.9	1	EV
7RN8LB	130.3	-0.32	12.3	130.3	-0.32	12.3	1	LA
9X6M3D	141.4	0.01	17.6	141.4	0.01	17.6	1	EV
CBEBMJ	153.4	0.36	31.1	153.4	0.36	31.1	1	EV
H3HRJ4	148.8	0.23	7.6	148.8	0.23	7.6	1	LA
H3XMUX	118.4	-0.67	8.6	118.4	-0.67	8.6	1	EV
HEEPKH	97.4	-1.29	14.3	97.4	-1.29	14.3	1	LA
HY8X9L	161.4	0.60	15.9	161.4	0.60	15.9	1	LA
KXYEVL	141.8	0.02	11.2	141.8	0.02	11.2	1	EV
LNK7X2	135.9	-0.15	10.5	135.9	-0.15	10.5	1	XX
LUDWBF	123.7	-0.51	6.7	123.7	-0.51	6.7	1	EV
PBAFGT	143.1	0.06	12.9	143.1	0.06	12.9	1	EV
PBWAF7	119.0	-0.65	9.8	119.0	-0.65	9.8	1	LA
PQZKKG	110.4	-0.91	8.1	110.4	-0.91	8.1	1	LA
RVNTY8	96.4	-1.32	11.9	96.4	-1.32	11.9	1	LA
VEQXWQ	212.1	2.10 *	99.3	212.1	2.10*	99.3	1	EV

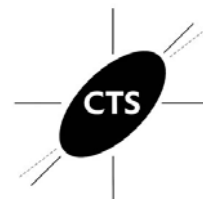
Consensus (All Labs) Results			
Month Mean	141.08	Grand Mean	141.08
Avg SDr	35.13	Avg SDr	35.13
SD btwn Labs	33.88	SD btwn Labs	33.88
Labs Incd	20	Labs Incd	20

Instrument Code List as Reported by the Labs

(EV) - Emveco Microgag Model 210-R

(LA) - L & W Autoline

(XX) - Instrument make/model not specified by lab



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2LULKZ	138.4	-1.57	8.2	148.8	-1.53	14.5	3	SC
78WDJM	180.0	1.40	10.2	184.1	1.62	6.8	3	HY
9X6M3D	161.0	0.04	23.9	171.5	0.50	18.3	4	HY
BWB2TH	164.5	0.30	8.6	174.9	0.80	5.9	4	SC
ERVVZM	137.0	-1.67	14.1	152.4	-1.22	16.1	4	HZ
H3KV42	164.4	0.29	4.3	174.0	0.72	4.0	4	TM
HY3KGJ	170.6	0.73	8.0	177.3	1.01	9.4	4	XX
JBA2DE	157.4	-0.21	4.5	155.4	-0.95	7.3	4	SC
NALM7K	182.7	1.59	6.1	172.7	0.60	9.2	4	SC
PBAFGT	151.6	-0.63	5.7	159.1	-0.62	5.0	4	TM
RVNTY8	159.4	-0.07	4.3	164.4	-0.15	4.8	4	TM
U8YG94	156.1	-0.30	2.7	162.6	-0.30	5.3	4	TM
UWBQ96	174.9	1.04	4.8	175.1	0.82	5.6	4	HY
VEQXWQ	147.2	-0.94	24.8	151.6	-1.29	17.6	4	TM

Consensus (All Labs) Results			
Month Mean	160.37	Grand Mean	165.97
Avg SDr	11.50	Avg SDr	10.51
SD btwn Labs	13.98	SD btwn Labs	11.16
Labs Incd	14	Labs Incd	14

Instrument Code List as Reported by the Labs

(HY) - Huygen Digitized Scott Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress

(SC) - Scott Internal Bond Tester (Manual)

(TM) - TMI Monitor/Internal Bond Tester

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
 Analysis 234
COF Inclined Plane (Slide Angle), 36 lb Linerboard - 36Z
 TAPPI Official Test Method T815



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2CLBT2	26.4	-0.38	1.1	26.3	-0.58	1.4	4	ZZ
2HVALE	23.2	-1.67	1.5	24.5	-1.53	1.3	4	ZZ
3ZP6GW	27.0	-0.15	2.3	29.1	0.89	2.4	4	ZZ
9ABQWL	26.8	-0.22	1.1	26.8	-0.32	1.1	1	ZZ
9FFNNY	28.2	0.33	3.9	28.1	0.35	3.4	4	ZZ
9X6M3D	28.0	0.25	2.4	27.9	0.27	1.8	4	ZZ
H3KV42	25.3	-0.82	4.6	24.0	-1.78	3.6	4	ZZ
HEEPKH	28.2	0.33	1.5	27.7	0.16	1.4	4	ZZ
JBA2DE	30.6	1.28	0.5	30.3	1.49	0.9	4	ZZ
K3RK83	29.0	0.65	0.7	28.7	0.68	2.1	2	ZZ
LNK7X2	26.0	-0.54	1.9	26.4	-0.53	1.5	4	ZZ
PBAFGT	29.6	0.89	2.3	28.0	0.31	1.8	4	ZZ
RVNTY8	33.4	2.39 *	4.0	31.0	1.86	2.9	4	ZZ
UWBQ96	26.6	-0.30	0.7	26.2	-0.66	0.5	4	ZZ
VEQXWQ	25.0	-0.94	2.0	25.6	-0.97	2.3	4	ZZ
YQXVJH	24.6	-1.10	3.6	28.1	0.34	2.4	4	ZZ

Consensus (All Labs) Results			
Month Mean	27.37	Grand Mean	27.40
Avg SDr	2.47	Avg SDr	2.10
SD btwn Labs	2.52	SD btwn Labs	1.91
Labs Incd	16	Labs Incd	16

Instrument Code List as Reported by the Labs

(ZZ) - Instruments No Longer Tracked

Containerboard Interlaboratory Testing Program
Analysis 237

Air Resistance, 36 lb Linerboard - 36Z
TAPPI Official Test Method T460



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3ZP6GW	50.0	-0.15	1.6	50.5	0.07	1.8	4	LP
4QVNGC	50.1	-0.11	1.4	50.5	0.06	3.4	4	XX
7RN8LB	53.1	0.72	3.2	53.4	0.99	3.6	2	TL
92NYZ3	49.9	-0.16	1.1	50.6	0.12	1.8	3	LP
9ABQWL	53.3	0.79	2.2	53.3	0.96	2.2	1	LA
9FFNNY	46.6	-1.09	3.2	46.9	-1.04	3.1	4	GA
9X6M3D	57.4	1.91	2.3	55.2	1.54	2.6	4	LA
CBEBMJ	52.5	0.56	3.1	52.5	0.71	3.1	1	XX
G6LQYX	49.3	-0.33	2.9	50.9	0.20	3.0	4	GG
H3HRJ4	48.8	-0.47	1.4	49.6	-0.19	1.6	4	LA
H3KV42	51.6	0.32	4.4	53.1	0.88	2.8	4	HG
JPCZEB	52.1	0.45	1.7	51.9	0.50	2.1	4	XX
LNK7X2	53.0	0.69	2.3	51.6	0.44	2.4	4	XX
NALM7K	50.8	0.09	1.7	44.5	-1.80	2.0	4	LP
RVNTY8	43.0	-2.08 *	1.5	44.5	-1.80	1.5	4	LA
UWBQ96	53.1	0.72	1.8	52.5	0.69	2.6	4	HG
VEQXWQ	51.5	0.28	2.5	45.9	-1.36	6.4	4	XX
YQXVJH	42.8	-2.14 *	2.3	47.1	-0.99	1.9	4	LP

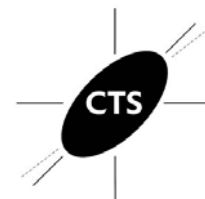
Consensus (All Labs) Results			
Month Mean	50.49	Grand Mean	50.25
Avg SDr	2.40	Avg SDr	2.87
SD btwn Labs	3.59	SD btwn Labs	3.19
Labs Incd	18	Labs Incd	18

Instrument Code List as Reported by the Labs

- (GA) - Gurley Precision #4340 Automatic Densometer
- (GG) - Gurley Precision #4320 Densometer
- (HG) - Technidyne - Hagerty Model #1 and Profile System
- (LA) - L & W Autoline
- (LP) - L & W Air Permeance Tester SE 166
- (TL) - Teledyne Gurley Densometer #4110, Oil Flotation
- (XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
2LULKZ	58.0	59.4	58.2	60.4	59.0	-1.72	2.4	1.1	59.5	-1.68	2.4	1.6	16	LX
3J2Q36	63.4	63.4	62.1 H	60.7	62.4	0.15	4.4	1.3	60.4	-1.16	3.9	2.5	16	LC
3ZP6GW	63.3	60.7	63.5	60.8	62.1	-0.01	2.3	1.5	61.4	-0.58	2.8	1.4	16	LZ
46VKJB	63.1	62.0	62.8	62.8	62.7	0.31	2.0	0.5	62.7	0.22	2.5	0.5	16	XX
6RKYPY	62.5	62.3	62.8	62.3	62.5	0.19	2.9	0.2 L	62.7	0.24	3.0	0.7	16	LZ
72AFY7	62.5	62.0	61.3	No Data	61.9	-0.10	3.1	0.6	61.7	-0.38	3.2	1.6	15	LC
8BRVB8	61.1	62.8	62.5 L	62.8 L	62.3	0.09	1.4	0.8	63.0	0.38	1.5	0.9	16	TD
92NYZ3	60.8	60.7	60.4 L	61.7	60.9	-0.68	1.7	0.5	60.8	-0.94	1.9	0.5	12	LD
AK49QZ	63.3	64.0	63.8	63.5	63.7	0.84	1.8	0.3	63.5	0.71	1.7	0.7	16	LC
BQAPWK	58.9	58.9	60.7	61.3	59.9	-1.21	2.9	1.3	60.8	-0.91	2.9	1.2	16	LD
BWB2TH	65.6	64.0 H	66.6 *	65.3	65.4	1.80	3.7	1.1	66.1	2.27 *	3.6	1.2	16	LD
CBEBMJ	55.8 * H	58.9	57.5 *	58.8	57.8	-2.41 *	4.6	1.4	60.9	-0.87	4.2	2.5	12	MB
DKKTF2	60.6	64.0	60.8	60.7 L	61.5	-0.34	2.2	1.6	62.2	-0.09	2.7	1.4	16	LD
ERVVZM	63.5	63.0	64.4	62.8	63.4	0.72	3.4	0.7	62.7	0.21	3.0	1.2	15	LC
G4JZG4	66.1	65.1	62.6	67.6 *	65.3	1.77	2.4	2.1	64.7	1.40	2.3	1.5	16	LC
GBKCG8	63.5	60.3	62.1	60.8	61.7	-0.25	2.3	1.4	62.1	-0.12	2.4	1.9	16	EM
HEEPKH	58.0 L	58.9 L	59.2 L	59.5	58.9	-1.77	1.5	0.6	59.6	-1.66	1.6	0.7	16	TH
HY3KGI	69.8 X	68.6 X	68.5 X	69.3 X	69.1	3.83 X	3.5	0.6	66.0	2.17 *	3.5	3.2 H	16	LC
HY8X9L	61.1	61.7	59.4	57.9	60.0	-1.15	3.5	1.7	60.5	-1.09	3.9	2.3	15	LD
JPCZEB	60.4	63.1	63.6	61.3	62.1	-0.01	2.4	1.5	62.2	-0.08	2.6	1.0	16	LD
LN7X2	63.5	62.7	63.1	62.8	63.0	0.51	3.1	0.4	63.8	0.87	3.2	0.9	16	LZ
LTPF29	65.4	59.7	61.6	65.6	63.1	0.52	3.2	2.9	64.0	1.00	3.6	2.3	16	LD
M4YNR6	60.8 L	61.5	60.7	59.1	60.5	-0.90	1.4	1.0	60.6	-1.04	1.8	1.1	14	LC
MRAFHJ	67.7 *	No Data	62.4	60.5	63.5	0.78	3.3	3.7 H	63.6	0.77	3.5	3.4 H	15	LZ
MVLP4L	60.9	62.4	No Data	No Data	61.6	-0.28	2.4	1.0	61.5	-0.49	2.3	1.9	5	LZ
PBAFGT	60.8 L	62.1	61.0	61.8	61.4	-0.39	2.3	0.6	61.3	-0.60	2.8	1.0	16	LD
PB7AF7	57.1 *	61.4	55.4 X	59.5	58.3	-2.09 *	3.1	2.6	59.1	-1.95	4.7	4.3 H	16	MB
PQPJ3N	63.0	62.4	62.2	62.5	62.5	0.22	1.9	0.3	62.6	0.13	2.4	0.5	16	LD
QUX8TB	61.6	61.4	62.3	63.9	62.3	0.09	1.9	1.1	62.9	0.32	2.4	1.2	16	LD
T2RMNF	61.8	63.3	63.2	62.4	62.7	0.30	2.4	0.7	62.4	0.03	2.1	0.8	16	MB
U766F3	65.6	65.6	64.5	64.4	65.0	1.59	1.9	0.6	64.3	1.17	2.3	1.0	16	EM
UWBQ96	60.6	60.2	59.4	62.3	60.6	-0.82	3.5	1.2	61.0	-0.84	3.3	1.0	16	LC
VFTY8C	62.3 H	64.0 H	59.1	64.3 H	62.4	0.16	5.5	2.4	62.1	-0.13	5.3	2.7	16	TG
VGB788	65.6	63.3	62.7	65.7	64.3	1.22	3.1	1.6	63.7	0.80	3.1	1.7	16	LC
VJQ3WQ	61.0 L	61.9 L	61.8 L	62.3 L	61.7	-0.22	0.9	0.6	61.8	-0.30	2.0	1.5	16	XX



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
WDJ9G9	62.5	62.1	60.2	61.9	61.7	-0.24	3.1	1.0	60.6	-1.05	2.8	1.6	16	TH
X2JKYQ	62.9 L	61.4	62.7	65.0	63.0	0.49	2.6	1.5	63.9	0.91	2.6	1.1	16	TM
XXH4JV	71.0 XL	65.7*	65.6	59.2	65.4	1.80	3.2	4.8 H	64.6	1.34	3.3	3.2 H	15	XX
YQXVJH	62.4	61.7	62.4	63.0	62.4	0.14	2.8	0.5	62.3	-0.02	2.9	1.0	16	LC
YYLVUZ	62.5	63.6	65.4	No Data	63.8	0.94	2.6	1.4	64.5	1.31	2.6	3.1 H	15	LZ
ZEWUDR	62.1	61.5	62.0	62.7	62.1	-0.03	2.4	0.5	61.9	-0.26	2.1	0.7	16	LC

Consensus (All Labs) Results											
Wk Mean	62.09	62.12	62.01	62.16	Month Mean	62.12				Grand Mean	62.35
Avg SDr	3.20	2.53	2.94	2.70	Avg SDr	2.84				Avg SDr	2.96
SD btwn Labs	2.48	1.74	2.00	2.16	SD btwn Labs	1.81				SD btwn Labs	1.67
Labs Includ	39	39	38	37	SD btwn Wks	1.59				SD btwn Wks	1.81
Labs Exclud	2	1	2	1	Labs Includ	40				Labs Includ	41
Labs not rcvd	0	1	1	3							

Instrument Code List as Reported by the Labs

- (EM) - Emerson 1200 Series
- (LD) - L&W Crush Tester 248
- (LZ) - L & W Crush Tester (model not specified)
- (TD) - TMI Digital Crush Tester, Model 17-09
- (TH) - TMI Compression Tester, Model 17-76
- (XX) - Instrument make/model not specified by lab
- (LC) - L & W Crush Tester 48
- (LX) - L & W 506
- (MB) - Messmer Buchel K440
- (TG) - TMI Compression Tester, Model 17-10
- (TM) - TMI/Hinde & Dauch



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
4QVNGC	73.6	72.8	72.0 L	72.1 L	72.6	-0.62	1.5	0.7	72.4	-0.88	1.4	0.9	16	XX
72AFY7	77.8*	76.2 H	77.1*	74.3	76.4	1.30	3.2	1.5	75.4	1.30	3.1	2.3	16	LZ
8BRVB8	72.6	72.9 L	72.0 L	72.3 L	72.5	-0.70	1.1	0.4 L	73.5	-0.06	2.3	1.2	16	TD
G4JZG4	74.3	78.1	74.2	73.6	75.0	0.62	2.1	2.0	75.1	1.13	2.2	1.5	16	LC
MRAFHJ	73.9	No Data	68.9 H	79.6*	74.1	0.17	5.3	5.4 H	74.6	0.75	3.8	3.8 H	15	LZ
QUX8TB	72.8	74.6	74.1	73.5	73.8	-0.02	2.1	0.8	75.1	1.13	2.2	1.4	16	LD
T2RMNF	74.6	73.7	73.5	72.7	73.6	-0.11	2.1	0.8	73.4	-0.12	2.4	0.8	16	MB
UWBQ96	72.6	72.6	73.2	75.7	73.5	-0.15	2.7	1.5	73.5	-0.09	2.9	1.6	16	XX
VGB788	75.9	78.1	81.5 XL	77.5 L	78.2	2.27*	2.0	2.4	79.5	4.36 X	2.7	2.1	16	LC
XXH4JV	74.9	72.2	71.8	64.2 XH	70.8	-1.56	4.1	4.6 H	70.9	-2.01*	4.6	4.8 H	16	TU
YQXVJH	72.3	72.4	71.2	72.8 H	72.2	-0.84	2.9	0.7	73.0	-0.46	2.6	1.8	16	XX
YYLVUZ	75.0	75.8	72.9	No Data	74.6	0.38	2.5	1.5	74.1	0.34	2.3	2.7	15	LD
ZEWUDR	72.5 L	71.1	72.7	73.3	72.4	-0.73	1.5	0.9	72.2	-1.03	1.6	0.8	16	LC

Consensus (All Labs) Results

Wk Mean	74.05	74.20	72.80	74.31	Month Mean	73.81	Grand Mean	73.60
Avg SDr	2.33	2.21	3.36	2.22	Avg SDr	2.77	Avg SDr	2.74
SD btwn Labs	1.60	2.35	1.97	2.36	SD btwn Labs	1.95	SD btwn Labs	1.35
Labs Incd	13	12	12	11	SD btwn Wks	2.31	SD btwn Wks	2.32
Labs Excl'd	0	0	1	1	Labs Incd	13	Labs Incd	12
Labs not rcvd	0	1	0	1				

Instrument Code List as Reported by the Labs

(LC) - L & W Crush Tester 48

(LZ) - L & W Crush Tester (model not specified)

(TD) - TMI Digital Crush Tester, Model 17-09

(XX) - Instrument make/model not specified by lab

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

(TU) - TMI Universal Crush Tester (TMI K440)

Containerboard Interlaboratory Testing Program
Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM73
TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
3J2Q36	44.4	43.0	44.0	43.6	43.8	0.21	3.0	0.6	42.9	-0.04	2.8	1.2	16	LC
AK49QZ	50.2 X	48.9 *	50.1 X	48.5	49.4	2.34 *	2.1	0.9	46.5	1.53	1.7	2.1	16	LC
BQAPWK	42.0	41.4	42.5	41.4 L	41.8	-0.52	2.1	0.5	42.4	-0.25	2.0	1.0	16	LD
ERVVZM	41.5	39.7	41.8	40.3	40.8	-0.89	2.5	1.0	40.8	-0.96	2.3	0.8	15	LD
GBKCG8	40.7	41.5	42.5	41.8	41.6	-0.59	2.1	0.7	42.0	-0.41	2.4	0.8	16	LC
HY8X9L	45.5	43.3	44.0	45.6	44.6	0.53	2.5	1.1	43.7	0.33	2.2	1.5	15	LD
JPCZEB	43.8 H	44.4 H	43.2	44.7 H	44.0	0.30	4.5	0.7	43.2	0.10	3.9	1.0	16	LD
LTPF29	46.8	45.9	47.3 X	48.0	47.0	1.43	2.5	0.9	48.2	2.31 *	2.8	1.3	16	LZ
MVLP4L	40.7	37.5	No Data	No Data	39.1	-1.55	2.8	2.2 H	39.1	-1.67	2.5	2.2 H	5	LZ
T2RMNF	43.1	43.6	42.5	40.8	42.5	-0.27	2.4	1.2	42.9	-0.03	2.6	1.0	16	MB
UTFWQV	42.5	43.0 L	43.8 L	44.4	43.4	0.08	1.3	0.8	43.1	0.06	1.3	0.9	12	WK
UWBQ96	44.9	43.1	44.3	44.4	44.2	0.36	2.9	0.8	43.9	0.41	2.7	1.0	16	LC
YJUBFG	41.2	41.5	41.1	40.6	41.1	-0.79	1.6	0.4	40.7	-0.97	1.9	0.6	16	TH
YQXVJH	42.3	41.2	43.4	39.1	41.5	-0.64	2.4	1.9	42.1	-0.40	2.2	2.1	15	LC

Consensus (All Labs) Results

Wk Mean	43.03	42.72	43.00	43.32	Month Mean	43.20	Grand Mean	42.97
Avg SDr	2.45	2.69	2.79	2.35	Avg SDr	2.58	Avg SDr	2.45
SD btwn Labs	1.94	2.71	1.02	2.96	SD btwn Labs	2.66	SD btwn Labs	2.29
Labs Includ	13	14	11	13	SD btwn Wks	1.09	SD btwn Wks	1.35
Labs Exclud	1	0	2	0	Labs Includ	14	Labs Includ	14
Labs not rcvd	0	0	1	1				

Instrument Code List as Reported by the Labs

(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

(WK) - Zwick Z005 Crush Tester

Containerboard Interlaboratory Testing Program
Analysis 261

STFI, 26 lb Corrugating Medium - CM73
TAPPI Provisional Test Method T826



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
3ZP6GW	13.8	13.3	No Data	13.7	13.6	-1.57	1.1	0.3	13.6	-1.83	1.1	0.3	15	LU
46VKJB	14.6	14.7	14.5	15.0	14.7	-0.27	1.2	0.2	14.7	-0.16	1.1	0.3	16	XX
6RKYPY	15.5	15.0	15.3	15.0	15.2	0.36	1.1	0.3	15.1	0.45	1.2	0.4	16	LW
AK49QZ	16.4	16.9	16.8	15.4	16.4	1.75	0.7	0.7	15.2	0.61	0.7	0.9	15	XX
CBEBMJ	15.6 L	16.2 L	16.5 L	17.0 *	16.3	1.69	0.4	0.6	16.3	2.39 *	0.4	0.9	12	BK
GBKCG8	14.9	14.3	13.2	14.0	14.1	-0.94	1.2	0.7	14.4	-0.57	1.2	0.6	15	LB
HEEPKH	14.5	14.4	14.8	14.8	14.6	-0.30	1.2	0.2	14.7	-0.09	1.3	0.3	16	LW
HY8X9L	14.5	15.7	15.1	14.6	15.0	0.07	1.3	0.5	14.9	0.26	1.2	0.5	15	LZ
J6LZAZ	14.1	13.9	13.7	13.0	13.7	-1.47	1.3	0.5	13.7	-1.67	1.2	0.9	16	XX
M4YNR6	16.1	15.9	15.4	15.8	15.8	1.03	1.4	0.3	14.8	0.02	1.3	1.4 H	11	LW
PQPJ3N	14.8	14.9	14.6	14.5	14.7	-0.25	1.3	0.2	14.8	0.06	1.3	0.2	16	XX
QUX8TB	14.6	15.4	14.4	14.1	14.6	-0.32	0.9	0.6	14.9	0.27	0.9	0.5	16	LA
UWBQ96	14.6	15.4	15.1	15.2	15.0	0.18	1.2	0.3	15.0	0.29	1.2	0.3	16	LU
WDJ9G9	15.2	14.9	15.0	14.8	14.9	0.06	1.0	0.2	14.7	-0.04	1.0	0.5	16	TT

Consensus (All Labs) Results

Wk Mean	14.93	15.07	14.93	14.77	Month Mean	14.90	Grand Mean	14.76
Avg SDr	1.21	1.09	1.08	1.12	Avg SDr	1.13	Avg SDr	1.11
SD btwn Labs	0.74	0.94	0.98	0.96	SD btwn Labs	0.84	SD btwn Labs	0.66
Labs Includ	14	14	13	14	SD btwn Wks	0.44	SD btwn Wks	0.66
Labs Exclud	0	0	0	0	Labs Includ	14	Labs Includ	14
Labs not rcvd	0	0	1	0				

Instrument Code List as Reported by the Labs

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