

# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #485 (B)- February 2010

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[Introduction to the Containerboard Program](#)

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

[Instrument Manufacturer Contacts](#)

Analysis	Sample Lot	Analysis Name
<a href="#"><u>201</u></a>	<a href="#"><u>BOX4</u></a>	<a href="#"><u>Box Compression Strength, Corrugated Boxes</u></a>
<a href="#"><u>202</u></a>	<a href="#"><u>ECT3</u></a>	<a href="#"><u>Edgewise Compressive Strength, Wax (T811), Corrugated board</u></a>
<a href="#"><u>203</u></a>	<a href="#"><u>ECT3</u></a>	<a href="#"><u>Edgewise Compressive Strength by Clamp (T839), Corrugated board</u></a>
<a href="#"><u>205</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>207</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>215</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</u></a>
<a href="#"><u>217</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</u></a>
<a href="#"><u>223</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>STFI of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>225</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>STFI of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>228</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Roughness - Stylus Method, 42 lb Linerboard</u></a>
<a href="#"><u>231</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Internal Bond Strength, Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>234</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Coefficient of Static Friction - Inclined Plane, 42 lb Linerboard</u></a>
<a href="#"><u>237</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Air Resistance - Gurley Method, Linerboard, 42 lb linerboard</u></a>
<a href="#"><u>240</u></a>	<a href="#"><u>CM71</u></a>	<a href="#"><u>Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>250</u></a>	<a href="#"><u>CM71</u></a>	<a href="#"><u>Fluted Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>255</u></a>	<a href="#"><u>CM71</u></a>	<a href="#"><u>Ring Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>261</u></a>	<a href="#"><u>CM71</u></a>	<a href="#"><u>STFI of Medium, 26 lb Corrugating Medium</u></a>

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## 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 50 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.

<b>Material</b>	<b>Lot Code</b>	<b>Dates in Use</b>
36# Linerboard	36U3	May 2008 -
42# Linerboard	42X1 42X2	March 2008 - May 2009 June 2009 -
69# Linerboard 69# Linerboard	69Y1 69Y2	July 2008 - March 2009 May 2009 -
Corrugating Medium	CM71 CM72	October 2009 - February 2010 March 2010 -

## 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:

<u>Flag</u>	<u>Explanation</u>
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**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).

## INSTRUMENT MANUFACTURER CONTACTS

If your data results have been flagged with an "X" and you believe that the problem may be with your instrument (and not your testing procedures), then CTS urges you to contact the appropriate instrument manufacturer. Where possible, CTS has asked the manufacturer to supply a contact person who is familiar with the Containerboard Collaborative Reference Program, and who can thus work with you on evaluating your results to better determine the cause of the problem. Additional contact names will be added as they become available.

Emerson Apparatus  
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Lorentzen & Wettre USA Inc.  
Bill Crain, Technical Manager  
1055 Windward Ridge Pkwy  
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2910 Expressway Drive South  
Islandia, NY 11722  
Phone: (631) 439-5400  
FAX #: (631) 439-5420  
info@testingmachines.com

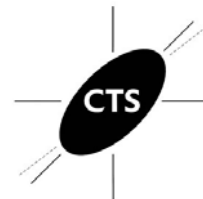


WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2U4BTK	725.9	-0.28	27.3	706.0	-0.61	35.8	2	LL
423CLX	729.1	-0.25	43.0	724.1	-0.43	39.4	2	RP
6EXTHH	728.1	-0.26	22.8	695.9	-0.71	22.8	2	XX
8EV6KW	706.7	-0.47	31.8	705.8	-0.61	32.7	2	LO
CND2Q7	579.0	-1.69	29.5	611.5	-1.56	32.1	2	XX
D263C7	675.0	-0.77	34.3	689.0	-0.78	36.2	2	ER
EAGVF7	775.9	0.19	38.8	809.5	0.43	63.3	2	TC
FV4NCM	695.5	-0.57	37.8	696.3	-0.71	28.2	2	LL
H6WELE	742.8	-0.12	65.3	788.9	0.22	73.4	2	LH
HEENW7	796.0	0.38	30.6	846.7	0.80	42.7	2	TR
MW6PR7	707.8	-0.46	46.3	725.9	-0.41	40.2	2	LG
NN7W26	943.0	1.79	27.7	928.0	1.62	48.4	2	LH
PFN7V4	856.2	0.96	72.4	882.0	1.16	68.9	2	TS
Q4RJZR	704.6	-0.49	27.0	728.5	-0.38	55.4	2	TD
QNDUWR	519.8	-2.25 *	46.0	609.0	-1.58	42.6	2	ES
R4JHKC	750.4	-0.05	32.4	752.1	-0.15	30.3	2	LL
RGWYW9	698.5	-0.55	68.2	696.5	-0.70	51.4	2	TB
RJH72X	916.0	1.53	52.4	935.8	1.70	40.3	2	XX
THEXFQ	872.0	1.11	57.0	909.2	1.43	44.5	2	XX
UEVHDB	897.9	1.36	26.0	845.4	0.79	50.2	2	XX
V9WKMJ	707.3	-0.46	38.8	719.0	-0.48	36.3	2	ER
XQE4AF	708.7	-0.45	53.9	679.8	-0.87	44.7	2	LO
YHHMXG	791.9	0.35	75.5	791.2	0.25	72.5	2	LM
Z8FLCC	952.9	1.88	27.3	968.4	2.02 *	27.9	2	LN
Z8GZKV	710.6	-0.43	26.2	723.2	-0.44	20.4	2	EX

**Consensus (All Labs) Results**

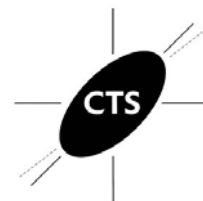
Month Mean	755.66	Grand Mean	766.71
Avg SDr	44.37	Avg SDr	45.53
SD btwn Labs	104.79	SD btwn Labs	99.70
Labs Incd	25	Labs Incd	25

Containerboard Interlaboratory Testing Program  
Analysis 201  
**Top to Bottom Box Compression Strength**, Corrugated Boxes - BOX4  
TAPPI Official Test Method T804



**Instrument Code List as Reported by the Labs**

(ER) - Emerson 6200 Series	(ES) - Emerson 8510
(EX) - Emerson Apparatus (Model not specified)	(LG) - TLS / L.A.B. Validator Series
(LH) - L.A.B. Compression Tester Model #10610	(LL) - Lansmont 76-5K
(LM) - Lansmont 122-15k	(LN) - Lansmont 152-50k
(LO) - Lansmont 152-30k	(RP) - Regmed P4000M
(TB) - TMI Monitor/Compression Tester, Model 17-70	(TC) - TMI Monitor/Compression Tester, Model 17-37
(TD) - TMI Digital Crush Tester, Model 17-09	(TR) - Toyo Seiki Model RCT-5TU
(TS) - Tinus Olsen Model CTM	(XX) - Instrument make/model not specified by lab



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
7AR8PT	37.9	0.13	1.4	38.0	-0.22	1.1	4	TC
9RGQGN	35.6	-0.43	3.4	38.1	-0.18	3.0	4	LC
D67M7P	41.3	0.95	1.0	41.3	0.68	1.4	4	LC
HFA9J6	36.5	-0.20	3.2	41.4	0.70	3.9	4	TD
JXK2PY	42.1	1.14	1.2	41.9	0.83	1.5	2	LZ
YZ2DBA	30.7	-1.60	1.9	32.1	-1.81	2.0	3	WK

Consensus (All Labs) Results					
<b>Month Mean</b>	37.33		<b>Grand Mean</b>	38.79	
<b>Avg SDr</b>	2.23		<b>Avg SDr</b>	2.35	
<b>SD btwn Labs</b>	4.15		<b>SD btwn Labs</b>	3.72	
<b>Labs Incd</b>	6		<b>Labs Incd</b>	6	

**Instrument Code List as Reported by the Labs**

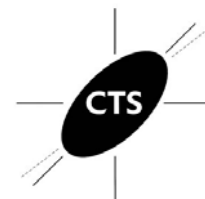
(LC) - L&W Crush Tester 48

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

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

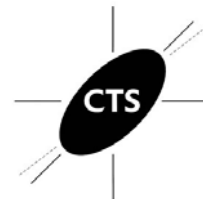
(TD) - TMI Digital Crush Tester, Model 17-09

(WK) - Zwick Z005 Crush Tester



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
26TR2A	43.5	-0.03	1.8	43.1	-0.03	1.5	4	TC
3BAEZQ	43.7	0.06	1.2	44.5	0.56	1.4	4	TL
43TDX8	44.9	0.51	1.9	42.1	-0.43	2.8	4	LX
6AWVFQ	42.1	-0.55	2.3	44.2	0.44	2.2	4	LC
73B36Q	44.6	0.38	1.8	43.8	0.28	1.9	4	TA
79CKXJ	42.9	-0.24	1.6	42.1	-0.42	2.1	4	LC
7ZHE6H	41.9	-0.64	2.0	42.1	-0.42	1.8	3	LC
8RZ42A	40.9	-1.01	3.3	41.4	-0.68	2.4	4	EN
9VYLYG	46.5	1.12	1.8	45.7	1.02	1.6	4	TD
AB7PWL	41.8	-0.68	2.1	42.9	-0.10	2.3	4	LC
AGUMPP	40.1	-1.31	0.8	40.1	-1.21	1.0	4	TC
BMZ7F8	35.2	-3.19 X	3.3	37.6	-2.21 *	2.9	3	TK
DN4MJV	44.4	0.33	3.0	40.4	-1.07	3.7	2	LD
F63ARE	50.1	2.49 *	3.6	48.3	2.06 *	3.3	4	EM
FHNF3	40.8	-1.07	1.9	43.4	0.09	1.5	2	LZ
FMMG6H	43.0	-0.21	1.5	43.8	0.27	1.7	4	LC
J7ET87	44.4	0.32	1.6	44.1	0.40	1.9	4	LC
JDEN3R	45.5	0.74	1.3	42.6	-0.20	1.3	4	LC
K2KPVL	44.7	0.42	2.1	42.5	-0.24	1.8	4	LD
K2LBN9	42.0	-0.60	2.0	44.1	0.40	2.1	4	EM
KKZVHQ	44.4	0.34	1.7	43.2	0.05	1.6	4	EN
LX2F6T	43.4	-0.07	0.8	43.8	0.29	1.4	4	TD
M2DU9X	46.9	1.28	2.6	47.9	1.90	2.6	4	LZ
M43FBV	41.2	-0.92	0.8	40.4	-1.09	0.9	4	XX
NA22H3	44.4	0.31	1.1	44.7	0.64	0.9	4	TC
NEJYDK	42.8	-0.28	1.4	42.6	-0.20	2.0	4	LC
NFXK2E	47.2	1.39	1.1	47.1	1.59	2.6	4	TM
NZUXAQ	49.3	2.19 *	2.4	48.8	2.26 *	2.2	4	EM
P9Z4GD	40.4	-1.22	2.2	40.8	-0.93	2.4	3	EM
QLYK9L	39.7	-1.48	1.8	40.6	-0.99	1.5	4	TC
U28FVH	41.0	-0.96	1.6	41.5	-0.66	2.0	4	EN
U83FTK	41.2	-0.88	1.4	41.4	-0.67	1.4	4	EM
UEFMX3	42.8	-0.31	1.5	40.6	-0.99	1.4	4	CT
V28Q8R	48.6	1.94	3.3	47.1	1.59	2.3	3	LC
V3KT2Y	42.0	-0.59	1.1	42.3	-0.32	1.7	4	EM
XMJC2J	41.6	-0.76	2.0	40.7	-0.97	2.1	4	TC

Containerboard Interlaboratory Testing Program  
 Analysis 203  
**Edgewise Compressive Strength by T839**, Corrugated board - ECT3  
 TAPPI T839



**Consensus (All Labs) Results**

<b>Month Mean</b>	43.56	<b>Grand Mean</b>	43.13
<b>Avg SDr</b>	1.96	<b>Avg SDr</b>	2.04
<b>SD btwn Labs</b>	2.62	<b>SD btwn Labs</b>	2.52
<b>Labs Incd</b>	35	<b>Labs Incd</b>	36

**Instrument Code List as Reported by the Labs**

(CT) - Con-Ten	(EM) - Emerson 1200 Series
(EN) - Emerson 2200	(LC) - L&W Crush Tester 48
(LD) - L&W Crush Tester 248	(LX) - L&W 506
(LZ) - L&W Crush Tester (model not specified)	(TA) - Thwing-Albert (model not specified)
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TD) - TMI Digital Crush Tester, Model 17-09
(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 - 42X2  
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	
28AYUA	103.5	102.2	110.2	108.8	106.2	-0.17	10.5	3.9	105.6	-0.43	11.2	5.1	16	AH
2PAPDX	113.2	115.3	122.6*	110.2	115.3	1.87	12.2	5.3	112.3	1.36	11.7	5.7	15	LA
3VZY7N	110.9 L	115.0	104.8	105.6	109.1	0.48	6.8	4.8	106.5	-0.19	8.3	4.5	16	LJ
46X4RA	105.2	107.4	112.2	112.5	109.3	0.54	11.0	3.6	110.7	0.92	9.6	3.0	16	AA
6KN7J6	113.9	107.5	115.3	107.4	111.0	0.92	10.0	4.2	104.0	-0.85	10.2	5.6	16	LA
6WZ2MN	111.1	107.6	117.5	109.7	111.5	1.02	10.8	4.3	111.7	1.19	12.1	4.0	13	LC
76UTQV	102.3	102.1	105.9	105.8	104.0	-0.65	12.7	2.1	106.7	-0.14	10.5	3.4	16	LZ
7EFXXV	No Data	No Data	108.7	104.8	106.7	-0.04	11.9	2.8	106.0	-0.33	10.9	2.2	12	TB
8KQW7Z	111.6 H	113.4	108.8	108.3	110.5	0.81	12.6	2.4	109.4	0.58	10.1	2.1	16	LA
8N8E8G	101.6	101.4	101.3	101.7	101.5	-1.21	6.0	0.2 L	102.5	-1.24	6.0	2.0	16	LZ
8VGTEC	100.4	100.4	100.5	101.7	100.7	-1.38	10.1	0.6 L	101.5	-1.53	10.4	1.1	16	AH
99RHJ9	108.0	103.1	105.0	103.2	104.8	-0.47	11.4	2.3	107.1	-0.03	11.1	2.8	16	LC
9JMLNM	110.2	109.0 L	113.1	108.8	110.3	0.75	8.5	2.0	107.6	0.11	8.7	4.5	16	LZ
AP92FD	109.7	109.2 L	107.7	113.4	110.0	0.69	5.4	2.4	109.7	0.65	5.1	1.9	15	XX
AQWZMP	108.1	116.8	110.4	110.4	111.4	1.00	13.7	3.7	109.3	0.56	11.1	3.1	16	LA
BK72TU	115.7	105.6	105.0	103.8	107.5	0.13	10.7	5.5	114.1	1.83	11.4	11.5 H	16	AX
BQLRL2	110.3	110.4	104.6	No Data	108.4	0.34	13.0	3.3	108.5	0.34	10.8	3.4	15	AH
C42JCF	110.4	113.1	108.4	111.5	110.9	0.88	8.5	2.0	110.5	0.89	9.7	3.6	16	LA
E6PRJL	104.4	112.9	117.9	110.7	111.5	1.01	10.4	5.6	107.0	-0.07	11.5	5.2	16	TX
ED3LUH	No Data	No Data	102.3	99.0	100.6	-1.41	8.8	2.3	106.1	-0.30	10.6	3.9	14	LA
EGW7F9	108.8	98.9	101.0	104.9	103.4	-0.78	7.8	4.4	105.2	-0.54	9.0	4.0	16	LC
ER9LZ7	111.9	108.5	108.9	117.1*	111.6	1.04	6.6	4.0	108.0	0.22	7.5	4.7	16	LB
EVBRTC	107.3	118.4	111.9	107.6	111.3	0.98	8.5	5.2	111.0	1.00	9.7	3.5	15	TB
G2X9HM	113.8	113.2	108.4	112.6	112.0	1.13	11.6	2.5	112.8	1.49	11.0	3.1	16	LA
GFWDLD	110.0	104.0	111.9	111.6	109.4	0.55	10.1	3.7	110.7	0.94	11.7	2.9	16	LJ
H4JEL4	100.1	98.7	108.7	107.4	103.7	-0.71	11.1	5.0	104.9	-0.61	10.9	3.0	16	LA
JF6KXD	107.0 L	113.0	107.6 L	112.9	110.1	0.71	9.1	3.3	110.1	0.77	8.6	4.9	16	LA
JTJ4TM	102.0	104.0	106.0	109.8	105.5	-0.33	9.4	3.3	108.5	0.35	10.1	3.8	16	AH
JU4UER	100.0	108.1	102.9	106.5	104.4	-0.57	6.8	3.6	104.6	-0.69	7.8	2.9	8	TB
K7PJCX	108.2	112.8	104.7	106.1	108.0	0.23	11.8	3.5	107.2	0.00	12.5	3.7	16	AH
KKWBGU	105.5	102.9 L	99.9	104.6	103.3	-0.82	7.8	2.5	101.3	-1.57	7.9	2.6	16	AH
KP9RXQ	104.2	102.2	105.3	104.1	103.9	-0.66	7.4	1.3	106.9	-0.07	6.9	3.4	16	TB
KTBLUM	103.8	104.1	106.6	106.5	105.3	-0.37	10.6	1.5	104.6	-0.69	10.9	2.9	15	AH
MBQJJ6	103.1	111.0	101.5	105.6	105.3	-0.36	11.2	4.2	106.7	-0.14	11.0	4.2	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
N2AH4U	117.0	121.7*	119.6	133.0X	122.8	3.55X	10.6	7.1	107.9	0.18	8.4	10.0H	16	LC
NRBP8N	105.1	111.7	111.1	108.1	109.0	0.46	9.2	3.1	109.3	0.55	11.3	3.4	16	LZ
PJUIW4	95.8*	98.2	97.7	98.0	97.4	-2.12*	10.3	1.1	99.1	-2.15*	10.0	2.8	16	LA
PJVAZD	107.9	102.7	105.6	106.2	105.6	-0.29	11.9	2.2	111.3	1.10	10.7	4.7	16	LC
Q4B38K	107.7	103.9	102.5	104.5	104.6	-0.51	10.8	2.2	105.8	-0.38	10.4	1.8	16	TB
QHCWKE	116.1	108.9	112.1	108.2	111.3	0.98	11.5	3.6	109.4	0.58	10.0	4.4	14	AH
R4MWXC	100.0	96.8	98.0	97.1	98.0	-2.00	10.2	1.4	98.0	-2.46*	10.2	1.4	4	LP
TC2KV6	117.5	119.2	112.7	119.2*	117.2	2.28*	10.7	3.1	113.9	1.79	10.7	5.3	16	TB
TMEB7A	102.6	100.6	99.4	100.8	100.9	-1.35	10.5	1.3	101.4	-1.54	9.6	1.6	12	AH
VJNBVP	110.0	103.6	No Data	107.1	106.9	-0.01	12.4	3.2	108.0	0.21	11.4	5.4	14	AX
VXV9DB	96.3*	95.1	No Data	No Data	95.7	-2.50*	10.5	0.9	98.8	-2.24*	8.3	3.0	9	TC
WEHX2C	104.1	105.4	No Data	No Data	104.7	-0.49	8.9	1.0	107.9	0.19	9.0	2.8	6	TB
WU2REU	115.8	106.0	114.0	107.0	110.7	0.84	10.0	4.9	110.9	0.98	11.0	4.1	16	AA
WVH4XZ	101.7	109.1H	120.9*H	109.3	110.3	0.74	19.7	7.9H	107.3	0.03	14.2	5.9	16	XX
WWUKM	107.6L	109.1L	107.5L	110.7	108.7	0.40	4.3	1.5	109.8	0.69	5.5	2.9	16	AX
XDY7RR	114.2	110.6	109.5	94.3*	107.1	0.05	8.2	8.8H	110.0	0.74	12.2	5.6	16	LA
Z7PFVL	108.9	102.2	106.1	99.7	104.2	-0.60	10.2	4.1	104.4	-0.74	9.8	3.9	12	LA
ZGJMMB	102.6	102.0	103.7	101.2	102.4	-1.02	9.4	1.1	102.4	-1.29	9.4	1.1	4	LC

**Consensus (All Labs) Results**

<b>Wk Mean</b>	107.33	107.18	107.91	106.79	<b>Month Mean</b>	106.92	<b>Grand Mean</b>	107.21
<b>Avg SDr</b>	9.32	10.21	11.60	10.10	<b>Avg SDr</b>	10.36	<b>Avg SDr</b>	10.13
<b>SD btwn Labs</b>	5.37	6.10	5.87	4.97	<b>SD btwn Labs</b>	4.49	<b>SD btwn Labs</b>	3.76
<b>Labs Includ</b>	50	50	49	48	<b>SD btwn Wks</b>	3.62	<b>SD btwn Wks</b>	4.24
<b>Labs Exclud</b>	0	0	0	1	<b>Labs Includ</b>	51	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	2	2	3	3				

**Instrument Code List as Reported by the Labs**

- (AA) - Perkins Model A
- (AH) - Perkins Model AH
- (AX) - Perkins Mullen Tester (model not specified)
- (LA) - L & W Bursting Strength Tester
- (LB) - L & W Burst-O-Matic
- (LC) - L & W Autoline
- (LJ) - L & W Bursting Strength Tester J-Type
- (LP) - L & W Bursting Strength Tester P-Type
- (LZ) - L & W (model not specified)
- (TB) - TMI Monitor/Burst 1000
- (TC) - TMI Monitor/Burst (Model 13-71)
- (TX) - TMI Monitor/Burst (model not specified)
- (XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
Analysis 207

Bursting Strength (Mullen), 36 lb Linerboard - 36U3  
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
2VFH69	97.6	92.8	94.8	99.1	96.1	1.03	9.7	2.8	90.3	-0.31	9.7	5.1	12	LA
32BTKY	94.1	90.5	95.9	93.4	93.5	0.43	9.3	2.2	93.4	0.54	9.7	4.7	12	TX
3LEW2Z	104.7 X	102.0 *	102.4 *	99.2	102.1	2.42 *	11.1	2.2	97.2	1.59	10.6	4.2	12	TB
4XCDRK	93.1	92.5	No Data	89.7	91.7	0.03	9.9	1.8	91.3	-0.04	10.5	3.2	11	AX
7RUEAR	87.4	79.4 X	87.5	84.2	84.7	-1.61	11.1	3.8	85.4	-1.67	9.2	3.1	12	LA
943GMJ	95.0	93.2	97.9	93.3	94.9	0.75	10.5	2.2	93.1	0.46	11.2	2.9	12	LC
9M3E8F	89.9	92.9	91.9	86.5	90.3	-0.30	9.8	2.8	92.6	0.33	9.5	2.9	12	LJ
9R4ZWY	86.8	84.9	No Data	No Data	85.9	-1.33	7.9	1.4	85.4	-1.66	7.1	2.0	8	TC
A67XAX	90.8	92.0	93.0	93.2	92.3	0.15	10.1	1.1	94.2	0.75	10.2	4.5	12	LZ
BQCEEQ	99.4	98.5	96.8	94.9	97.4	1.34	8.3	2.0	95.8	1.21	10.5	2.6	12	LA
BV87MN	94.6	94.2	93.7	92.3	93.7	0.48	10.9	1.0	94.7	0.90	10.3	2.0	12	AH
BXC7WF	93.8	87.9	85.0	88.0	88.7	-0.68	8.5	3.7	88.1	-0.92	8.8	3.1	12	LC
CA37AP	No Data	No Data	91.3	88.1	89.7	-0.44	9.1	2.2	90.1	-0.37	10.6	1.8	8	TB
D3YM7W	92.3	88.1	93.4	87.4	90.3	-0.30	9.8	3.0	89.1	-0.64	9.5	2.9	12	AH
DMX27G	95.9	92.3	95.3 H	89.8	93.3	0.40	11.7	2.8	92.8	0.38	12.4	2.9	12	LA
DWMTTA	86.6	88.1	89.9	90.5	88.8	-0.66	9.4	1.7	89.6	-0.52	9.9	2.2	12	LA
EYN9LX	93.1	92.9	92.7	No Data	92.9	0.30	8.8	0.2 L	93.0	0.41	9.3	2.4	11	AH
FD9Q86	98.3	93.0	95.3	98.0	96.1	1.04	9.7	2.5	94.8	0.93	9.5	2.6	12	AA
FQG8GV	92.1	89.8	89.8	92.5	91.0	-0.14	10.7	1.4	91.7	0.08	9.6	1.4	12	TB
GEZQ9A	93.6	94.8	96.4	97.3	95.5	0.91	9.8	1.7	97.1	1.56	9.4	2.8	11	TB
GGCEPF	87.2	91.3	91.0	87.5	89.3	-0.55	10.1	2.2	91.4	-0.02	11.4	3.3	12	XX
HXPNPR	81.6 *	84.9	79.3 X	82.4 *	82.0	-2.22 *	5.7	2.3	84.8	-1.84	5.2	2.6	12	TB
J68T7D	86.2	86.8	86.7	88.7	87.1	-1.05	8.5	1.1	87.1	-1.20	8.3	1.1	8	AH
JZB3Z3	96.8	96.9	94.9	91.7	95.1	0.79	6.5	2.4	90.0	-0.40	7.2	4.2	12	LB
KB6Z6D	98.0	99.4	100.3	98.3	99.0	1.71	11.3	1.1	94.9	0.96	9.2	4.0	11	LA
KD6F26	91.4	91.0	91.9	91.5	91.5	-0.04	5.9	0.4 L	91.4	-0.01	6.0	0.6 L	12	LZ
KF86F7	86.5	89.5	86.8	92.3	88.8	-0.66	8.5	2.7	89.9	-0.43	9.7	2.3	11	LA
KQFJWD	96.5	96.0	91.3	92.3	94.0	0.56	9.6	2.6	93.3	0.50	8.9	2.6	12	LA
KRRGYN	86.5	87.5	85.3	84.6	86.0	-1.31	11.5	1.3	86.0	-1.52	11.5	1.3	4	LC
LAQFWV	100.2 *	95.5	102.0 *	105.6 X	100.8	2.13 *	11.8	4.2	94.2	0.74	9.6	5.9 H	12	LC
LKZNVV	96.3	96.5	93.7 L	98.7	96.3	1.08	5.9	2.0	98.3	1.90	6.1	3.2	12	AX
LYYR2L	87.0 L	84.0	No Data	No Data	85.5	-1.42	5.7	2.1	87.2	-1.19	7.4	2.5	5	TB
M8Q9N6	93.0	96.8	94.0	91.6	93.8	0.52	9.5	2.2	91.7	0.07	10.0	3.1	11	LA
N3JMJ4	92.2 L	91.4 L	91.6	90.4 L	91.4	-0.05	4.2	0.7	91.2	-0.08	4.5	1.3	11	XX

Containerboard Interlaboratory Testing Program  
Analysis 207

Bursting Strength (Mullen), 36 lb Linerboard - 36U3  
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	
PER7NJ	91.1	74.6X	75.0X	84.9	81.4	-2.36*	7.8	8.0 H	82.0	-2.60*	7.4	5.5	8	LP
QKEB2K	90.9	97.6	97.0	90.1	93.9	0.53	10.3	3.9	93.9	0.68	10.3	3.9	4	TB
QKVJ6U	88.7	84.2	84.8	83.7	85.3	-1.45	9.5	2.3	85.3	-1.69	9.5	2.3	4	LA
RB2EGQ	91.4	92.1	92.2	92.0	91.9	0.07	10.7	0.4 L	91.6	0.04	9.8	0.6 L	12	AH
TKCNZH	93.2	91.9	91.8	90.1	91.8	0.03	10.4	1.3	91.8	0.09	10.3	2.1	12	AH
UJD6A2	No Data	No Data	87.6	94.6	91.1	-0.12	10.8	5.0	88.3	-0.87	11.2	3.5	8	LA
UJZCVL	90.3	89.7	90.4	90.9	90.3	-0.30	10.4	0.5	90.3	-0.32	10.6	2.8	12	LC
UK482H	97.0	97.9	95.6	96.5	96.8	1.19	11.5	1.0	96.5	1.39	9.9	2.0	12	AA
VHF8CY	94.8	91.0	89.4	91.7	91.7	0.03	9.7	2.3	92.4	0.26	9.4	2.9	12	LZ
VJN2VY	94.0	94.0	91.7	93.5	93.3	0.39	10.2	1.1	93.6	0.61	9.6	1.9	12	LZ
WE74ZH	88.3 L	92.4	91.6	91.2	90.9	-0.17	6.1	1.8	87.7	-1.04	6.3	5.2	12	AH
WHG4MA	91.2	90.2	88.6	90.8	90.2	-0.33	10.1	1.1	92.9	0.40	10.3	2.8	12	AH
WVEV68	90.3	90.7	88.8	84.5	88.6	-0.71	9.1	2.8	94.9	0.97	8.8	11.1 H	8	AX
X27RL4	89.9	87.4	92.4	90.2	90.0	-0.38	11.4	2.0	92.7	0.35	9.9	4.1	12	LC
XH9MNA	86.3	87.7	85.4	89.4	87.2	-1.02	9.8	1.7	88.3	-0.88	10.0	2.5	11	AH
XT9DK3	90.7	94.9	92.6	94.3	93.1	0.35	9.7	1.9	96.3	1.33	9.9	3.4	12	LA
YARLNQ	87.8	91.3	90.5	92.1	90.4	-0.28	6.7	1.9	89.9	-0.42	9.1	4.1	8	LJ
YMBWZ3	94.6	95.4	97.9	99.7	96.9	1.22	9.3	2.3	95.9	1.24	9.9	2.8	12	LA

Consensus (All Labs) Results

<b>Wk Mean</b>	91.92	92.01	92.35	91.41	<b>Month Mean</b>	91.62	<b>Grand Mean</b>	91.46
<b>Avg SDr</b>	9.23	9.15	9.85	9.80	<b>Avg SDr</b>	9.48	<b>Avg SDr</b>	9.45
<b>SD btwn Labs</b>	4.09	4.09	4.22	4.32	<b>SD btwn Labs</b>	4.32	<b>SD btwn Labs</b>	3.62
<b>Labs Includ</b>	49	48	47	48	<b>SD btwn Wks</b>	2.50	<b>SD btwn Wks</b>	3.49
<b>Labs Exclud</b>	1	2	2	1	<b>Labs Includ</b>	52	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	2	2	3	3				

Instrument Code List as Reported by the Labs

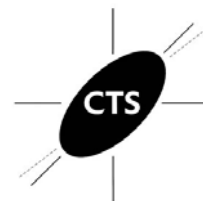
- (AA) - Perkins Model A
- (AX) - Perkins Mullen Tester (model not specified)
- (LB) - L & W Burst-O-Matic
- (LJ) - L & W Bursting Strength Tester J-Type
- (LZ) - L & W (model not specified)
- (TC) - TMI Monitor/Burst (Model 13-71)
- (XX) - Instrument make/model not specified by lab
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LC) - L & W Autoline
- (LP) - L & W Bursting Strength Tester P-Type
- (TB) - TMI Monitor/Burst 1000
- (TX) - TMI Monitor/Burst (model not specified)



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	
4DRNRN	95.5	97.0	95.4	95.0	95.7	0.39	3.5	0.9	96.2	0.67	3.7	1.2	16	LC
4E7XNM	101.0	106.0*	100.2	104.9*	103.0	1.99	3.9	2.9	98.0	1.08	4.3	4.4	15	XX
6MHD33	100.8	102.7	No Data	No Data	101.7	1.70	4.3	1.4	103.0	2.21*	4.1	2.8	6	LC
6NDZGR	96.3	97.7	96.4	95.4	96.4	0.54	2.8	1.0	94.2	0.22	2.5	1.7	12	EM
6TNZ4J	89.0	90.0	89.5H	90.3	89.7	-0.94	6.6	0.6	90.4	-0.65	6.2	0.8	16	LC
7B72VZ	92.6	93.5	97.0	No Data	94.4	0.09	3.0	2.3	96.2	0.65	3.6	2.4	15	LC
7C8YD2	87.2	85.7	90.6	89.0	88.1	-1.29	3.1	2.1	87.1	-1.41	3.6	2.0	16	TM
7ZVJD9	96.1	95.0	92.7	94.6	94.6	0.14	4.0	1.4	93.0	-0.07	3.7	2.4	16	LC
8VXDEW	93.8	92.5	91.6	92.7	92.6	-0.29	3.6	0.9	92.4	-0.19	3.4	2.7	16	LX
9GZHVP	94.8	91.7	92.0	95.6	93.5	-0.10	3.4	1.9	92.2	-0.25	3.5	1.8	12	EM
A2NZFF	95.8	93.9	94.8	94.8H	94.8	0.19	6.2	0.8	96.0	0.63	4.9	3.0	16	LC
AJDNFL	78.3X	80.8*	80.0*	82.0*	80.2	-3.02X	3.9	1.5	88.1	-1.17	3.9	7.8H	12	EM
AVCQQY	97.6	98.7	92.1	99.5	97.0	0.66	4.2	3.4	97.0	0.83	4.2	3.4	4	LC
BDBJGN	89.9	88.2	90.6	87.1	89.0	-1.10	3.6	1.6	92.7	-0.13	3.8	3.1	16	LC
C69UXX	87.0H	85.8	86.6	87.8	86.8	-1.58	4.4	0.9	88.1	-1.18	4.4	1.5	16	TX
CUQTB4	87.6	89.3	90.0	No Data	89.0	-1.10	3.1	1.2	89.5	-0.85	3.6	2.0	15	EN
CUU93X	95.9	91.0	93.4L	91.9	93.0	-0.20	2.9	2.2	91.6	-0.37	3.5	1.9	16	EN
CZNFJN	95.4	95.2	90.0	No Data	93.5	-0.10	4.0	3.1	94.9	0.37	4.4	1.9	12	MZ
DFNMYK	87.3	100.7	88.5	91.0	91.9	-0.46	4.4	6.1H	91.9	-0.31	5.4	5.6H	15	LC
DHUW9G	95.5	93.9	97.6	97.5	96.1	0.47	4.8	1.8	89.9	-0.77	4.6	4.1	16	EM
E4C2DX	91.9	91.1	92.3	93.2	92.1	-0.40	3.2	0.8	91.0	-0.52	3.4	1.7	8	LD
EMNNY7	97.1	101.0	97.2	100.8	99.0	1.11	4.2	2.1	97.0	0.83	4.2	2.3	12	LC
EVECU9	95.3	95.0	96.9	91.3	94.6	0.15	4.6	2.3	91.5	-0.41	3.7	2.9	16	TD
F9RQUE	80.3*	78.2*	77.8X	78.7X	78.7	-3.35X	3.6	1.1	81.4	-2.70*	3.5	2.3	16	XX
FPRWP3	92.0	91.1	88.1	85.5	89.2	-1.05	3.4	3.0	89.1	-0.94	3.6	2.9	12	MB
FTLFEL	97.0	93.9	94.1	91.1	94.0	0.01	4.3	2.4	94.0	0.17	4.0	3.6	16	LC
G84HHV	91.5L	89.2	91.7	91.0	90.8	-0.69	4.2	1.1	89.9	-0.77	4.2	2.3	16	EM
GEJ86X	94.9	98.6	98.2	99.5	97.8	0.84	3.8	2.0	97.8	1.03	3.8	2.0	4	LD
GX2NPP	101.8H	103.5	103.7*	101.7	102.7	1.91	5.3	1.0	98.4	1.16	5.9	4.1	16	LC
HG39JA	93.5	97.2	94.8	94.4	95.0	0.22	3.2	1.6	95.9	0.59	3.4	2.3	13	LC
HG6UCW	89.5	91.3	89.1	91.0	90.2	-0.82	4.3	1.1	90.2	-0.69	3.4	1.6	16	TD
HGLLZE	98.2H	103.4	87.9	87.9	94.4	0.08	5.6	7.7H	92.3	-0.23	6.0	4.9H	15	LC
HUANKR	91.5	90.8	89.7	88.9	90.2	-0.83	2.6	1.2	90.7	-0.59	3.0	1.0	16	TC
HXR8QN	94.4	92.5	94.9	94.4	94.0	0.01	3.7	1.1	93.6	0.07	4.3	1.6	16	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
HYRCEX	89.8 L	90.7	87.6 L	89.0 L	89.3	-1.03	1.9	1.3	89.8	-0.79	1.7	1.0	16	LZ
JDJMAE	90.4	89.8	93.8	92.3	91.6	-0.53	4.2	1.8	94.9	0.36	4.5	2.8	14	TC
KGTK9T	92.5	94.3	94.9	96.3	94.5	0.12	4.4	1.6	94.2	0.22	3.8	2.9	16	LC
L7EU6W	90.1 L	94.7 L	88.7 L	91.4 L	91.2	-0.60	1.5	2.6	88.3	-1.12	1.8	5.2 H	16	XX
LDVX34	94.4	94.5	98.8	91.7	94.9	0.20	3.5	2.9	95.7	0.54	3.5	4.4	16	LC
LE44GD	95.1	92.5	94.1	97.8	94.9	0.20	3.9	2.2	96.1	0.63	3.3	1.7	16	LC
M6XXCX	104.5 *	106.2 *	105.7 *	No Data	105.5	2.53 *	5.2	0.9	103.7	2.35 *	4.8	2.0	7	LZ
N2VZGF	83.4 *	86.3	83.3	87.8	85.2	-1.93	3.5	2.2	83.0	-2.33 *	6.8	5.6 H	16	IM
NGK842	90.5	94.0	93.9	90.2 H	92.1	-0.40	5.2	2.1	91.0	-0.52	4.5	2.3	15	LZ
P9RA76	94.9	93.7	95.2	No Data	94.6	0.14	4.1	0.8	94.6	0.29	4.0	1.5	14	LC
PLD2UU	100.1	98.4	101.6	101.6	100.4	1.42	3.8	1.6	99.4	1.40	3.9	2.5	16	EM
QHPHBN	95.4	95.9	95.2	97.3	96.0	0.44	3.7	0.9	96.0	0.62	4.4	2.2	16	LX
QLU4BM	88.7	89.6	91.5	90.7	90.1	-0.85	3.0	1.2	89.7	-0.80	3.1	1.5	16	EM
R6AMTC	95.2	95.5	93.4	95.0	94.8	0.18	3.4	1.0	94.5	0.27	3.5	1.1	16	LD
R893XT	104.7 *	102.7	106.7 *	105.5 *	104.9	2.41 *	4.4	1.7	103.3	2.27 *	4.0	1.5	16	LD
RDBTWR	100.8	98.6	99.9	98.0	99.3	1.18	3.6	1.3	97.5	0.95	4.2	2.7	16	LC
RDYBNE	101.2	98.2	No Data	No Data	99.7	1.26	3.7	2.1	99.6	1.44	3.6	3.5	9	LC
T4NHNH	85.7	84.7	84.6	85.0	85.0	-1.97	3.2	0.5	86.2	-1.60	3.6	2.0	16	LD
T874DE	92.4	95.4	95.9	100.8	96.1	0.47	3.8	3.5	96.6	0.76	4.2	3.6	16	MB
TB3YY8	No Data	No Data	93.7	93.9	93.8	-0.04	3.9	0.1 L	93.6	0.07	3.2	2.2	12	LD
TXFNC2	95.0	91.4	95.7	90.7	93.2	-0.17	4.2	2.5	92.1	-0.26	4.9	2.0	16	LC
U4GAU4	95.2	95.8	96.2	96.0	95.8	0.40	4.1	0.4 L	96.3	0.69	4.0	1.8	16	LD
VDB9A2	87.0	87.0	86.3	89.0	87.3	-1.46	3.9	1.2	87.5	-1.30	4.4	2.2	16	LX
VNEL7M	91.9	94.0	94.6	92.4	93.2	-0.17	2.9	1.3	92.6	-0.14	3.6	0.9	16	LC
X4PXRT	99.3	94.4 H	98.8	99.3	98.0	0.88	5.3	2.4	97.2	0.90	5.2	2.7	16	LC
XYXTZA	91.2	88.4	93.6	91.9	91.3	-0.59	3.6	2.2	90.7	-0.58	4.4	2.8	16	LD
Z8WU3R	87.6	89.3	88.3	90.4	88.9	-1.12	4.4	1.2	89.8	-0.79	4.0	1.7	16	EM
ZCVBFL	86.3	86.4	86.9 L	91.2 H	87.7	-1.38	4.6	2.4	78.2	-3.42 X	4.3	10.7 H	8	TB
ZZ7KJ3	92.1	90.3	96.4	112.7 X	97.9	0.86	3.9	10.2 H	93.9	0.13	4.7	6.3 H	16	LC



**Consensus (All Labs) Results**

<b>Wk Mean</b>	93.50	93.52	93.37	93.41	<b>Month Mean</b>	93.96	<b>Grand Mean</b>	93.27
<b>Avg SDr</b>	4.00	4.03	3.68	4.35	<b>Avg SDr</b>	4.02	<b>Avg SDr</b>	4.12
<b>SD btwn Labs</b>	5.01	5.64	5.13	4.96	<b>SD btwn Labs</b>	4.54	<b>SD btwn Labs</b>	4.41
<b>Labs Includ</b>	61	62	60	54	<b>SD btwn Wks</b>	2.54	<b>SD btwn Wks</b>	2.99
<b>Labs Exclud</b>	1	0	1	2	<b>Labs Includ</b>	61	<b>Labs Includ</b>	62
<b>Labs not rcvd</b>	1	1	2	7				

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200

(IM) - Instron 4486

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TM) - TMI/Hinde & Dauch

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

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

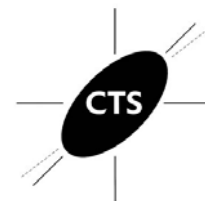
(LX) - L & W 506

(MB) - Messmer Buchel K440

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

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

(TX) - TMI Digital Crush Tester (model not specified)



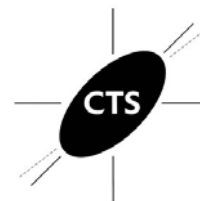
WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
23KAUK	77.1	71.4	70.8	74.1	73.4	-1.40	4.5	2.9	67.2	-2.65*	5.4	6.0 H	12	TB
2XLZ6P	88.1	91.8*	76.2	78.0	83.5	1.06	5.4	7.6 H	83.0	0.96	5.5	5.6 H	11	LC
3HZYWY	85.3	81.2	No Data	No Data	83.3	0.99	4.4	2.9	84.3	1.27	4.2	2.7	8	LC
3XH9XL	80.5	81.5	80.4	81.8	81.0	0.46	4.8	0.7	79.5	0.17	5.0	2.2	12	EM
486HYF	84.5	85.2	85.3	85.3	85.1	1.44	4.8	0.4 L	85.1	1.45	4.8	0.4 L	4	LC
4HNM2T	72.8	74.3	76.4	74.4	74.5	-1.13	3.5	1.5	75.3	-0.79	4.6	1.8	12	EM
6VR7CR	75.4	75.8	76.6	76.2	76.0	-0.76	3.5	0.5	76.3	-0.58	3.7	1.4	8	EM
7BXJXZ	76.8	77.4	78.4	74.4	76.7	-0.58	4.2	1.7	76.0	-0.64	3.9	1.8	12	LD
7LXM94	79.3	79.0	79.3	79.6	79.3	0.04	3.4	0.2 L	78.3	-0.11	4.1	1.3	12	EN
7MDP7P	79.4	80.0	78.0	77.4	78.7	-0.11	4.9	1.2	78.7	-0.01	4.8	1.5	12	LC
7XFD8	75.3	75.0	74.0	76.0	75.1	-0.99	3.9	0.8	73.8	-1.15	3.6	1.3	12	EM
849CTK	80.9	83.2	79.7	79.5	80.8	0.41	3.8	1.7	80.2	0.33	3.6	2.4	12	LC
8N468Y	83.3	80.4	81.2	84.2	82.3	0.76	4.5	1.8	82.7	0.90	4.6	2.9	12	MB
9838TF	75.8	75.4	75.6	76.0	75.7	-0.83	6.1	0.3 L	76.5	-0.53	5.6	1.0	12	LC
A793C6	80.9	80.6	83.6	83.3	82.1	0.72	4.1	1.6	81.4	0.60	4.1	1.8	12	LX
AVKT3X	84.8	84.8	No Data	No Data	84.8	1.37	4.5	0.0 L	86.9	1.87	5.2	2.2	5	LC
BHZKBP	83.0	81.7	83.2	83.4	82.8	0.89	4.4	0.8	81.1	0.54	4.4	3.1	12	LC
BTNQJM	80.1	80.5	77.7	80.4	79.6	0.12	4.3	1.3	78.9	0.03	4.1	1.8	12	TC
C3C9LM	76.4	74.9	75.8	77.3	76.1	-0.74	5.3	1.0	79.5	0.17	4.5	4.0	12	LC
CNTMZ9	90.6*	88.6	87.4*	86.5	88.3	2.21*	4.4	1.8	88.2	2.16*	4.1	1.5	12	LD
D9PXFV	78.8	83.8	81.4	No Data	81.3	0.52	4.0	2.5	76.7	-0.48	6.9	5.1 H	7	LC
DBERDG	81.9	80.8	77.5	77.8	79.5	0.09	3.8	2.2	80.4	0.38	4.0	2.4	11	LC
DGHD3D	85.1 L	81.5	84.3	82.8	83.4	1.04	3.9	1.6	83.3	1.04	3.5	1.5	12	LD
E92C3V	75.1	75.5	75.3	75.0 L	75.2	-0.95	2.8	0.2 L	75.2	-0.82	2.9	1.4	11	TC
EX8RZX	72.5	73.1	75.0	76.8	74.3	-1.16	2.9	2.0	73.4	-1.24	3.3	2.9	12	TM
FCRUNM	74.9	83.7	81.4	76.0 H	79.0	-0.04	6.3	4.2	76.9	-0.42	4.9	4.8	12	LC
G7EMBM	75.7	76.7	74.2	78.9	76.4	-0.66	4.8	2.0	67.1	-2.68*	6.2	10.3 H	12	IM
GB6746	74.6	73.4	77.8	77.1	75.7	-0.83	3.4	2.1	78.8	0.01	4.3	4.2	8	MB
GNJ3LF	72.2	71.1	71.5	75.5	72.6	-1.59	4.2	2.0	72.0	-1.56	4.7	1.9	12	LZ
GZGW73	83.3	85.1	84.7	86.6	84.9	1.40	4.1	1.3	84.1	1.23	3.7	2.6	12	LC
HK7HMY	70.6	74.9	75.8	78.3	74.9	-1.03	2.2	3.2	74.1	-1.06	2.0	3.6	12	XX
JALR2D	78.1	82.2	80.0	78.4	79.7	0.13	2.9	1.9	79.7	0.20	2.4	1.9	8	EM
KB7EFK	75.8	76.6	74.8	77.1	76.1	-0.74	4.5	1.0	76.6	-0.50	4.2	1.2	12	LC
KBEVEK	86.3	83.1 H	78.8 H	84.0	83.0	0.94	7.7	3.1	83.8	1.16	6.3	3.3	12	LC

Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36U3  
TAPPI Official Test Method T822



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	
KZRPUG	73.0	73.0	72.0	72.8	72.7	-1.56	5.2	0.5	74.0	-1.10	4.4	3.5	11	LC
L9Z9F6	83.6	86.4	81.8	84.0	84.0	1.16	3.7	1.9	79.5	0.16	4.6	5.6 H	11	XX
NU6C7B	No Data	No Data	75.7	76.1	75.9	-0.79	4.4	0.3 L	76.5	-0.52	4.1	0.6 L	8	LD
PQJX3N	78.0	84.8	82.8	85.2	82.7	0.86	4.9	3.3	82.7	0.90	4.9	3.3	4	LD
Q63Z9R	85.4	82.3	85.0	84.2	84.2	1.23	4.4	1.4	84.1	1.21	4.2	2.5	12	EM
Q8RX36	80.9	79.5	79.8	81.2	80.3	0.29	4.2	0.8	77.8	-0.23	4.6	2.2	12	EM
QD4FFK	74.2	73.6	72.1	72.9	73.2	-1.44	3.0	0.9	74.7	-0.95	2.8	1.8	12	LD
QE7JG7	79.8	77.2	80.0	82.6	79.9	0.19	3.5	2.2	79.3	0.12	4.2	2.5	12	LC
R6VHWQ	77.3	76.2	76.5	78.7	77.2	-0.48	3.2	1.1	76.9	-0.42	3.9	1.8	12	LC
RGV63G	73.7	74.6	71.8	74.0	73.5	-1.36	3.6	1.2	75.6	-0.74	4.0	2.0	12	TX
RU7GV4	77.7	80.3	81.1	No Data	79.7	0.13	2.5	1.8	79.1	0.07	3.4	1.1	11	LC
T8ZLYT	79.6	78.6	79.8	75.9	78.5	-0.16	4.4	1.8	77.8	-0.23	4.1	2.1	12	TD
TKA38J	81.1	77.9	80.1	80.7	80.0	0.20	4.3	1.4	80.0	0.27	4.3	1.4	4	LD
TRDZX2	67.1 *	63.9 X	69.4 *	66.0 X	66.6	-3.03 X	3.4	2.3	69.8	-2.05 *	3.8	3.1	12	XX
TVYK8B	81.2	82.9	82.1 L	78.8	81.2	0.51	3.2	1.7	80.4	0.36	3.3	2.0	12	LD
U3KRR3	68.9 *	69.9	70.5	70.4 *	69.9	-2.24 *	3.6	0.7	75.9	-0.66	4.3	6.5 H	8	EM
UBDLVK	78.9	78.8	78.7	81.2	79.4	0.06	3.7	1.2	78.9	0.02	3.5	2.1	12	TD
UKHAJH	78.2	77.4	79.3	78.6	78.4	-0.19	3.3	0.8	77.5	-0.30	3.5	1.3	12	LC
UNHKFH	76.6	81.4	78.8	80.0	79.2	0.01	4.1	2.0	77.5	-0.28	3.6	2.2	12	LC
UTJU87	79.0	68.5 *	73.4	No Data	73.7	-1.33	4.2	5.2 H	78.2	-0.13	4.5	5.0	8	MZ
VN2JCG	79.8	81.1	79.2	80.0	80.0	0.21	4.0	0.8	79.9	0.27	4.2	1.2	12	EM
WE98KT	83.4	81.0	80.7	82.0 L	81.8	0.64	3.7	1.2	81.8	0.70	4.2	1.2	8	LC
WFL64J	77.8	77.2	73.1	No Data	76.1	-0.75	4.7	2.6	74.6	-0.95	4.5	3.2	11	EN
X6V3XU	83.5	81.6	86.2	88.8 *	85.0	1.43	4.7	3.2	84.2	1.24	4.5	2.3	12	LD
XAELJH	74.9	74.5	72.6 L	74.1 L	74.0	-1.23	2.2	1.0	77.6	-0.28	2.2	3.0	12	LZ
XKZEF8	79.2	77.0	81.5	No Data	79.2	0.01	3.9	2.2	79.6	0.18	4.0	3.0	11	LC
Y9G3XA	77.2	74.3	78.6	No Data	76.7	-0.60	3.7	2.2	78.0	-0.19	4.0	2.4	11	LX
YMW6FX	78.2	85.3	75.8	82.8	80.5	0.33	5.7	4.3	82.7	0.91	5.8	5.2 H	11	LC
YY8PWK	89.8 *	88.3	87.7 *	No Data	88.6	2.28 *	4.5	1.1	88.6	2.25 *	4.5	1.1	3	LX
ZZWH6A	86.3	83.1	86.5	85.9	85.5	1.53	4.1	1.6	83.7	1.12	4.2	2.7	12	LC



**Consensus (All Labs) Results**

<b>Wk Mean</b>	79.04	79.20	78.46	79.31	<b>Month Mean</b>	79.14	<b>Grand Mean</b>	78.77
<b>Avg SDr</b>	4.15	4.24	4.12	4.45	<b>Avg SDr</b>	4.25	<b>Avg SDr</b>	4.34
<b>SD btwn Labs</b>	4.85	4.82	4.45	4.16	<b>SD btwn Labs</b>	4.13	<b>SD btwn Labs</b>	4.36
<b>Labs Includ</b>	63	62	62	54	<b>SD btwn Wks</b>	2.16	<b>SD btwn Wks</b>	3.16
<b>Labs Exclud</b>	0	1	0	1	<b>Labs Includ</b>	63	<b>Labs Includ</b>	64
<b>Labs not rcvd</b>	1	1	2	9				

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200

(IM) - Instron 4486

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TM) - TMI/Hinde & Dauch

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

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

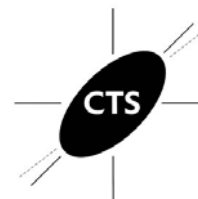
(TB) - TMI Monitor Compression Tester, Model 17-70

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

(TX) - TMI Digital Crush Tester (model not specified)



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
2PD6PX	No Data	No Data	24.1	23.0	23.5	-0.94	1.7	0.7	24.6	0.05	2.0	0.7	12	LW
38FW7Q	23.4	23.8	22.7*	23.4	23.3	-1.17	1.6	0.4	23.5	-1.21	1.8	0.6	16	LW
4CLRJY	25.4 L	25.9 L	25.0 L	26.5 L	25.7	1.14	0.0	0.6	34.3	11.63 X	0.0	8.3 H	16	LU
7GB4GR	23.7	23.5	23.6	22.3*	23.3	-1.21	1.9	0.7	22.9	-1.93	1.8	0.6	16	XX
89C4CY	24.5	23.7	22.7*	23.5	23.6	-0.91	1.9	0.8	23.8	-0.88	2.1	0.7	16	LZ
8UEMTR	25.3	25.5	26.3	25.8	25.7	1.19	1.3	0.4	25.8	1.55	1.9	0.5	8	XX
9J44BF	24.8	25.0	25.4	25.5	25.1	0.62	2.1	0.3	24.9	0.40	2.1	0.7	16	LU
9JHRLM	25.3	26.4	24.4	24.7	25.2	0.63	2.3	0.9	24.8	0.29	2.1	0.9	12	LW
A7M89Q	22.0	20.6 X	No Data	No Data	21.3	-3.11 X	1.5	1.0	21.2	-3.99 X	1.6	0.5	9	LZ
AP7U8Y	27.5*	26.0	26.4	40.7 X	30.2	5.49 X	2.9	7.1 H	30.2	6.69 X	2.9	7.1 H	4	LU
BTYXFN	24.9	24.1	25.5	25.0	24.9	0.35	2.2	0.6	25.0	0.57	2.2	0.5	16	LU
C76DZY	25.3	24.5	26.0	25.1	25.2	0.68	2.1	0.6	24.2	-0.43	2.1	0.8	16	LW
D6896B	22.2 L	24.9 L	No Data	No Data	23.5	-0.98	0.0	1.9 H	25.4	1.02	0.0	1.3	13	LZ
E94V4R	24.3 L	23.9 L	23.8 L	23.4 L	23.9	-0.62	0.1	0.4	24.9	0.38	0.1	0.9	16	TS
EQ32BL	24.3	23.0	25.2	23.9	24.1	-0.39	2.2	0.9	24.3	-0.34	2.1	0.9	16	LW
FGLVMF	26.2	24.0	25.0	26.1	25.3	0.79	2.2	1.1	25.2	0.76	1.9	0.7	8	XX
FKVRPB	22.8 L	22.9 L	21.5 XL	22.6 L	22.4	-2.01*	0.4	0.7	22.8	-2.09*	0.4	1.0	15	XX
FWTY3F	23.8	24.0	24.1	24.1	24.0	-0.49	1.4	0.1 L	24.6	0.12	1.4	0.8	12	LU
GZDBLV	24.7	24.1	26.1	24.6	24.9	0.34	2.1	0.8	24.9	0.38	2.1	0.8	4	LZ
H9WABD	24.3	24.7	23.6	25.7 L	24.6	0.08	2.4	0.9	24.4	-0.11	2.2	0.8	16	LU
HK2L7Y	25.4	25.1	25.6	25.4	25.4	0.86	1.4	0.2	25.3	0.92	1.4	0.2	16	LW
MHQTWP	23.6	23.5	23.8	23.8	23.7	-0.81	2.0	0.2	24.3	-0.34	2.4	0.6	16	LW
MVMG8A	23.4	24.6	24.2	24.1	24.1	-0.43	2.0	0.5	24.7	0.18	2.0	0.7	16	LW
NATPY7	24.3	25.8	26.0	25.5	25.4	0.86	1.3	0.7	25.3	0.87	1.5	0.6	16	LU
NDKHTF	24.7 L	23.0 L	24.7 L	26.2 L	24.7	0.14	0.4	1.3	25.2	0.74	0.4	1.5 H	12	LA
NGCVWC	23.1	22.6	24.6	23.8	23.5	-0.96	2.0	0.9	24.0	-0.65	2.2	0.9	16	LA
NJ6RXQ	22.1	21.6*	No Data	No Data	21.9	-2.57*	1.5	0.4	22.5	-2.47*	1.8	0.7	14	LU
PAPCG4	25.4	23.9	23.8 L	25.6	24.6	0.13	1.3	1.0	25.0	0.59	1.4	1.0	16	LZ
PXUE44	24.7	24.4	23.6	25.5	24.5	0.02	1.8	0.8	24.3	-0.27	1.6	0.8	16	XX
PZXAM7	25.4	25.7	25.1	25.5	25.4	0.90	2.1	0.3	24.7	0.17	1.6	0.6	12	LU
Q3WA94	25.8	25.3	25.1	24.7	25.2	0.67	2.1	0.4	25.6	1.29	2.0	1.0	16	LW
Q7DQGM	26.0	26.9	25.7	27.4*	26.5	1.92	2.2	0.8	26.1	1.86	2.2	0.8	8	XX
Q824QE	25.1	24.7	24.1	24.5	24.6	0.10	2.2	0.4	24.4	-0.20	2.4	0.7	16	LW
RD4TMD	25.3	25.3	25.0	No Data	25.2	0.67	2.6	0.2	25.0	0.58	2.7	0.9	15	LW



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
RUY7BK	23.4	24.1	23.9	24.3	23.9	-0.58	2.1	0.4	23.8	-0.87	2.1	0.7	16	XX
UKML8E	24.6	24.8	24.9	25.8 L	25.0	0.48	1.5	0.5	24.7	0.20	1.8	0.5	16	BK
WERJAT	26.6	26.6	25.8	25.2	26.0	1.49	2.3	0.7	25.1	0.70	2.4	0.9	16	XX
WMYLLX	25.3	27.4*	26.1	24.5	25.8	1.27	2.5	1.3	25.1	0.69	2.2	1.2	15	LW
X7M6E4	26.0	24.8	26.3 H	24.8	25.5	0.95	4.0	0.8	25.3	0.93	4.1	0.9	16	LW
XQ3RVH	24.3 L	24.8 L	24.1 L	23.6 L	24.2	-0.32	0.5	0.5	23.7	-1.02	0.5	1.5 H	16	LA
Z879RU	No Data	No Data	24.0	24.7	24.4	-0.13	2.0	0.5	24.1	-0.48	2.0	0.7	14	LW
ZUDPZH	21.3* L	22.2 L	24.1 L	23.2 L	22.7	-1.76	0.5	1.2	22.9	-1.94	0.4	0.7	16	XX

Consensus (All Labs) Results									
<b>Wk Mean</b>	24.50	24.53	24.75	24.67	<b>Month Mean</b>	24.51	<b>Grand Mean</b>	24.54	
<b>Avg SDr</b>	1.85	1.94	2.18	1.73	<b>Avg SDr</b>	1.89	<b>Avg SDr</b>	1.93	
<b>SD btwn Labs</b>	1.32	1.28	1.01	1.14	<b>SD btwn Labs</b>	1.03	<b>SD btwn Labs</b>	0.84	
<b>Labs Includ</b>	40	39	38	37	<b>SD btwn Wks</b>	0.76	<b>SD btwn Wks</b>	0.84	
<b>Labs Exclud</b>	0	1	1	1	<b>Labs Includ</b>	40	<b>Labs Includ</b>	39	
<b>Labs not rcvd</b>	2	2	3	4					

**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)

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

(TS) - TMI Monitor/STFI Compression Tester, 17-33

(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	
3GKPVK	20.7	20.5	21.5	20.3	20.8	-0.36	1.7	0.5	20.7	-0.42	1.5	0.9	11	XX
66JVJY	21.8	21.9	21.8	21.2	21.7	0.72	1.0	0.3	21.7	0.63	1.0	0.3	4	XX
73LQUY	21.3	20.4	21.7	21.4	21.2	0.12	1.6	0.6	21.0	-0.09	1.8	1.1	12	LW
7RJZ3G	21.2	21.6	20.6	21.3	21.2	0.13	1.6	0.4	21.1	0.03	1.7	0.3	12	LU
843HR8	21.0 L	21.3 L	21.4 L	20.4 L	21.0	-0.08	0.4	0.5	20.4	-0.73	0.3	1.4	12	LA
8NQ3RX	22.0	20.5	21.6	No Data	21.3	0.32	2.2	0.8	21.7	0.62	2.1	0.9	11	LW
9YKP8T	20.7	20.6	19.5	21.2	20.5	-0.70	1.7	0.7	21.5	0.41	2.0	1.1	12	LA
A8LVQK	22.2	21.3	20.7	20.5	21.2	0.11	1.7	0.8	21.2	0.08	1.7	0.6	11	LW
AGHKXP	No Data	No Data	20.9	21.3	21.1	0.06	2.0	0.3	21.4	0.33	1.6	0.5	8	LW
APDKGN	20.1	19.4	19.9	19.9	19.8	-1.53	1.6	0.3	19.4	-1.89	1.5	0.4	12	XX
BW36WN	No Data	No Data	20.0	20.3	20.1	-1.17	1.7	0.2	20.9	-0.22	1.7	0.7	8	LW
CDHXYW	20.9	21.9	21.9	22.1	21.7	0.75	1.4	0.5	21.6	0.54	1.5	0.4	12	BK
D387FE	20.0 L	22.8	20.4	22.6	21.4	0.43	1.2	1.5 H	21.0	-0.07	1.1	1.6 H	12	LZ
EE7Y4X	21.8	21.1	23.1	21.8	22.0	1.06	1.6	0.9	22.0	0.93	1.6	0.9	4	LZ
ENW7K9	21.7 L	22.2 L	No Data	No Data	22.0	1.07	0.0	0.4	22.5	1.50	0.1	0.6	10	LZ
GARM8E	20.4	20.9	20.2	20.4	20.5	-0.74	1.4	0.3	20.9	-0.24	1.4	0.6	8	LU
GL89ZN	20.8	20.8	21.3	20.8	20.9	-0.17	1.8	0.2	21.0	-0.09	1.9	0.5	12	LW
GRTTJN	21.4 L	20.3 L	20.2 L	20.6 L	20.6	-0.56	0.1	0.6	21.6	0.51	0.1	0.9	12	TS
GYBT3D	20.8	21.5	22.9	22.4	21.9	1.00	1.8	0.9	21.9	0.88	1.8	0.9	4	XX
HQ8RTC	21.4	22.6	21.9	20.8	21.7	0.70	1.9	0.8	21.5	0.43	1.7	0.9	8	LW
L4J6Y3	21.8	22.7	22.6	21.7	22.2	1.36	2.1	0.5	22.6	1.64	1.9	0.9	12	XX
L7G4BG	21.0 L	20.5 L	21.3 L	21.7 L	21.1	0.06	0.0	0.5	32.9	12.90 X	0.0	8.9 H	12	LU
LA7AC4	19.9 L	20.2 L	18.9* L	20.3 L	19.8	-1.49	0.3	0.6	20.3	-0.92	0.3	1.3	11	XX
LVYG88	20.1	21.0	20.5	22.7	21.1	0.00	1.5	1.1	20.8	-0.38	1.6	1.0	12	LW
MB628H	21.7	21.3	22.2	22.2	21.8	0.91	1.7	0.4	20.4	-0.72	1.7	1.1	12	LW
MCL3L7	21.4	21.3	21.2	21.3	21.3	0.25	1.2	0.1	22.1	1.12	1.3	0.8	11	LU
MP9HDC	19.4	18.9*	No Data	No Data	19.1	-2.34*	1.1	0.4	19.0	-2.27*	1.1	0.8	8	LZ
Q8AGUA	21.5	21.3	21.4	21.6	21.5	0.46	1.7	0.1	21.3	0.26	1.7	0.3	12	BK
RKHJ7J	20.5	21.1	20.9	20.9	20.8	-0.29	1.6	0.2	20.9	-0.25	1.7	0.5	12	LW
RLWZ84	21.0	20.2	20.4	20.7 L	20.6	-0.61	1.8	0.4	20.7	-0.46	1.6	0.7	12	LU
RRYPHC	19.8 L	22.0 L	22.1 L	22.3 L	21.5	0.57	0.4	1.2	21.4	0.33	0.4	1.3	12	LA
TFBGXZ	21.7	21.6	22.8	21.7	21.9	1.05	1.7	0.6	22.5	1.47	1.8	1.3	12	LW
TP3PWK	22.9	22.8	22.3	22.4	22.6	1.83	1.7	0.3	22.6	1.62	1.7	0.3	4	XX
UK3QYL	19.0	19.1	No Data	No Data	19.1	-2.43*	1.5	0.0 L	19.4	-1.82	1.5	0.7	10	LU



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
VJRUWL	18.9*L	19.1 L	19.4 L	19.6*L	19.2	-2.24*	0.3	0.3	19.3	-1.98	0.3	0.5	12	XX
VVGE76	18.4*	18.6*	19.1	17.1 X	18.3	-3.37 X	1.8	0.9	19.2	-2.09*	1.6	1.0	10	LU
W2TXBA	21.4	20.6	20.2	21.2	20.9	-0.27	1.6	0.5	21.2	0.13	1.9	1.2	12	LZ
W6L2RF	21.2	21.2	21.1	21.2	21.2	0.13	1.7	0.0 L	21.1	0.03	1.4	0.3	12	LW
WBBLVV	20.5	21.8	21.4	20.6	21.0	-0.04	1.8	0.6	21.3	0.18	1.8	0.6	12	LW
Y2J3FT	22.9	21.3	21.6	21.9	21.9	1.00	1.0	0.7	22.0	0.98	1.2	1.4 H	11	LU
Z4CYG8	21.8	21.8	22.0	36.8 X	25.6	5.47 X	2.4	7.5 H	24.0	3.13 X	2.2	5.2 H	8	LU
ZEX3N7	20.8	20.7	20.9	20.9	20.8	-0.30	1.8	0.1 L	20.3	-0.83	1.7	0.6	12	XX
ZJ2C4Z	21.8	21.2	22.6 H	22.6	22.1	1.22	3.1	0.7	21.9	0.83	2.9	0.6	12	LW

Consensus (All Labs) Results									
<b>Wk Mean</b>	20.96	21.02	21.16	21.26	<b>Month Mean</b>	21.08		<b>Grand Mean</b>	21.10
<b>Avg SDr</b>	1.54	1.57	1.73	1.43	<b>Avg SDr</b>	1.56		<b>Avg SDr</b>	1.56
<b>SD btwn Labs</b>	0.99	1.02	1.06	0.81	<b>SD btwn Labs</b>	0.83		<b>SD btwn Labs</b>	0.92
<b>Labs Incd</b>	41	41	40	37	<b>SD btwn Wks</b>	0.59		<b>SD btwn Wks</b>	0.87
<b>Labs Exclcd</b>	0	0	0	2	<b>Labs Incd</b>	41		<b>Labs Incd</b>	41
<b>Labs not rcvd</b>	2	2	3	4					

**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)

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

(TS) - TMI Monitor/STFI Compression Tester, 17-33

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

Containerboard Interlaboratory Testing Program  
Analysis 228

**Roughness - Stylus Method, 42 lb Linerboard - 42X**  
TAPPI Provisional Test Method T575



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2BETCK	102.8	-0.56	8.3	116.9	-0.37	11.3	3	EV
6FZPNZ	112.5	-0.31	26.6	114.1	-0.52	17.6	4	LA
6UXWKG	127.7	0.08	11.5	119.4	-0.24	13.3	4	EV
AJXLLN	187.7	1.62	48.3	162.3	1.99	35.6	2	EV
AMAKMH	125.7	0.03	2.8	130.3	0.32	2.8	4	EV
B7DUXY	31.8	-2.38 *	5.2	56.0	-3.53 X	6.6	4	EV
BQABLV	138.0	0.34	19.3	138.0	0.72	19.3	1	XX
DJ2MVB	102.7	-0.56	2.0	116.6	-0.39	9.7	4	XX
EZAQBQ	118.2	-0.16	11.2	120.0	-0.21	11.0	3	EV
HM8GXC	106.9	-0.46	14.5	106.5	-0.91	16.2	3	EV
KJ4CGP	78.6	-1.18	6.0	80.7	-2.25 *	18.5	4	EV
KRMA9N	115.2	-0.24	19.0	107.4	-0.86	14.7	4	EV
LP7WZK	157.1	0.83	24.3	152.8	1.49	18.2	4	EV
LRDV2D	143.2	0.48	21.1	140.0	0.83	15.4	4	EV
RKVCHD	220.7	2.46 *	15.2	217.1	4.83 X	20.6	4	EV
VEB2X9	136.5	0.30	26.1	143.3	1.00	18.9	4	EV
VPRU4A	116.1	-0.22	13.1	115.7	-0.43	14.7	4	EV
WQ9M2H	126.6	0.05	17.3	121.5	-0.13	18.5	4	LA
YQUBWG	120.4	-0.11	9.3	123.6	-0.03	11.6	4	EV

Consensus (All Labs) Results			
Month Mean	124.65	Grand Mean	124.06
Avg SDr	19.04	Avg SDr	17.00
SD btwn Labs	38.95	SD btwn Labs	19.26
Labs Incd	19	Labs Incd	17

**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

Containerboard Interlaboratory Testing Program  
Analysis 231

Internal Bond, 42 lb Linerboard - 42X  
TAPPI Provisional Test Method T569



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
72TDCX	84.0	-2.15 *	5.6	84.4	-2.25*	7.1	2	TM
B6J969	104.8	-0.20	5.4	103.6	-0.22	4.6	4	TM
BXTBDE	117.6	1.01	7.3	116.2	1.12	8.1	4	SC
DEHLE8	100.9	-0.56	11.0	147.1	4.40X	11.3	4	SC
HUUDLE	89.4	-1.64	6.3	90.0	-1.65	6.9	4	TM
MBJ4PJ	110.2	0.31	2.4	104.7	-0.10	4.6	4	TM
NBNBTW	104.6	-0.21	9.9	104.6	-0.11	7.4	4	TM
QHBFHH	97.4	-0.89	7.1	99.7	-0.63	7.7	4	SC
RB3ZAD	122.4	1.46	7.0	117.0	1.20	6.2	4	TM
RQKWLT	119.6	1.19	9.9	114.5	0.94	6.4	4	TM
TCVBND	106.4	-0.04	5.7	106.0	0.04	6.5	4	HY
WD2V3Q	112.2	0.50	10.8	112.9	0.77	7.0	4	HZ
WRV2LT	112.4	0.52	5.1	104.6	-0.11	5.9	3	SC
WXLU7Z	112.6	0.54	6.7	112.0	0.68	5.2	3	SC
Z9BWVX	108.7	0.17	1.9	108.6	0.31	4.0	4	HY

**Consensus (All Labs) Results**

<b>Month Mean</b>	106.88	<b>Grand Mean</b>	105.60
<b>Avg SDr</b>	7.29	<b>Avg SDr</b>	6.37
<b>SD btwn Labs</b>	10.65	<b>SD btwn Labs</b>	9.43
<b>Labs Incd</b>	15	<b>Labs Incd</b>	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

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

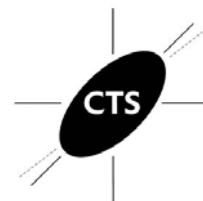


WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
4BWGT7	29.6	0.51	2.7	27.5	0.00	4.2	4	ZZ
9AXJ4L	21.0	-1.89	3.3	24.2	-1.13	2.7	4	ZZ
9HDJNW	27.6	-0.03	5.1	26.5	-0.35	4.6	4	ZZ
9RULPN	30.0	0.63	1.6	31.5	1.37	2.0	3	ZZ
AYGK9A	30.0	0.63	2.2	31.5	1.37	2.3	2	ZZ
BANU2C	22.0	-1.61	4.1	23.6	-1.33	4.6	3	ZZ
BFYW3M	26.8	-0.27	0.8	26.7	-0.27	0.5	4	ZZ
HDT2GP	29.2	0.40	3.1	28.9	0.46	1.8	4	ZZ
L8CLCH	28.1	0.09	2.4	27.7	0.05	2.3	4	ZZ
Q2UV66	26.2	-0.44	3.1	27.2	-0.12	3.3	4	ZZ
QQRRRU	31.4	1.02	3.1	27.9	0.12	3.0	4	ZZ
RQW9ZR	26.5	-0.35	1.3	26.2	-0.43	1.7	4	ZZ
TC427W	29.2	0.40	2.2	28.2	0.22	2.4	4	ZZ
UVHVR3	21.4	-1.78	2.1	21.6	-2.01*	2.3	3	ZZ
UVTYKU	31.0	0.91	3.2	27.8	0.11	3.3	4	ZZ
WMJUL9	31.6	1.07	4.5	31.7	1.43	3.7	4	ZZ
XBWLNT	27.2	-0.15	1.4	28.1	0.20	1.6	4	ZZ
Y9ZC7B	34.0	1.75	2.1	32.3	1.62	2.5	4	ZZ
ZVBUUH	24.6	-0.89	2.4	23.6	-1.33	3.0	4	ZZ

Consensus (All Labs) Results			
<b>Month Mean</b>	27.76	<b>Grand Mean</b>	27.49
<b>Avg SDr</b>	2.87	<b>Avg SDr</b>	2.93
<b>SD btwn Labs</b>	3.57	<b>SD btwn Labs</b>	2.93
<b>Labs Incd</b>	19	<b>Labs Incd</b>	19

**Instrument Code List as Reported by the Labs**

(ZZ) - Instruments No Longer Tracked



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2CACDL	15.7	-0.97	1.0	15.7	-1.14	1.7	4	XX
3DM6Q2	15.7	-0.97	2.1	16.9	-0.28	2.7	4	GA
77K6GN	20.5	0.72	2.9	17.8	0.35	2.6	3	LP
7MV7GH	15.7	-0.96	3.0	16.2	-0.80	2.9	4	XX
82TNUM	19.0	0.20	4.4	17.7	0.30	4.3	4	LP
8D6ZZP	17.9	-0.19	3.9	15.6	-1.19	3.4	4	XX
9AZU2A	18.9	0.17	2.4	18.1	0.55	2.1	4	LA
BCZK8M	16.9	-0.55	2.8	16.4	-0.63	2.5	4	HG
ENJBPG	19.3	0.31	3.5	17.7	0.26	3.3	2	TN
PLEF62	21.6	1.13	4.9	17.7	0.27	3.9	4	GG
Q4RVV3	16.3	-0.75	2.6	17.9	0.41	2.9	4	LW
QJ67LB	24.3	2.08 *	1.2	24.3	4.89 X	1.2	1	HG
R4AWCV	16.0	-0.86	0.7	15.1	-1.54	1.9	4	LA
TRLDZB	18.9	0.16	3.1	19.0	1.20	3.8	4	HG
X8WATT	23.7	1.86	1.8	20.6	2.29 *	1.4	4	LW
Y62ZAB	20.4	0.70	2.6	18.1	0.53	3.3	4	XX
Y9KB39	16.2	-0.77	1.8	18.3	0.67	3.4	4	XX
ZQF68J	14.7	-1.32	2.2	15.6	-1.24	2.7	4	XX

Consensus (All Labs) Results			
Month Mean	18.42	Grand Mean	17.32
Avg SDr	2.83	Avg SDr	2.96
SD btwn Labs	2.83	SD btwn Labs	1.43
Labs Incd	18	Labs Incd	17

**Instrument Code List as Reported by the Labs**

(GA) - Gurley Precision #4340 Automatic Densometer

(HG) - Technidyne - Hagerty Model #1

(LP) - L & W Air Permeance Tester SE 166

(TN) - Teledyne Gurley S-P-S Tester #4190

(GG) - Gurley Precision #4320 Densometer

(LA) - L & W Autoline

(LW) - L & W Gurley Densometer, Oil Flotation

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

Containerboard Interlaboratory Testing Program  
Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM71  
TAPPI Official Test Method T809



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	
2QMHR	65.3	63.5	63.8	No Data	64.2	0.49	2.4	1.0	62.0	-0.42	2.5	2.1	15	LC
2Y8TQT	63.9	67.9*	64.7	67.6	66.0	1.31	3.4	2.0	63.0	-0.01	4.2	4.3 H	16	LC
3Q7482	63.9	62.2	62.3	62.1	62.6	-0.22	2.1	0.9	62.3	-0.30	2.4	0.8	16	TB
3Y3CY3	60.2	60.9	63.4	63.0	61.9	-0.56	2.5	1.5	61.5	-0.62	3.5	1.3	16	MB
4JH9UJ	65.0	63.8	61.9 H	63.4	63.5	0.19	4.2	1.3	62.8	-0.10	3.9	2.9	8	LD
622XPG	63.8	64.1	65.1	62.4	63.9	0.34	2.2	1.1	63.9	0.31	2.8	1.2	16	LC
8GZQBG	60.6	60.8	59.2	62.2	60.7	-1.09	2.5	1.2	60.1	-1.12	2.5	1.1	8	LC
8TK2Y2	63.3	62.6	65.8	65.9	64.4	0.59	2.6	1.7	63.7	0.27	2.7	1.3	16	LC
8TYJME	62.1	62.4	65.4	67.1	64.3	0.51	3.0	2.4	66.0	1.12	3.3	2.6	12	MB
9BUFU2	63.5	61.3	62.7	62.2	62.4	-0.31	2.5	0.9	62.7	-0.14	2.4	0.6	16	TA
ATY6QX	62.4	63.0	64.7	62.9	63.2	0.05	2.9	1.0	62.9	-0.06	2.8	0.9	16	LD
BLJ3LZ	62.0	63.3	62.7	63.3	62.8	-0.13	3.3	0.6	62.5	-0.22	3.2	0.8	16	LC
CHMRF9	67.2	67.5	67.3	68.2	67.6	2.00*	3.6	0.5 L	68.8	2.21*	3.8	1.2	16	LD
CNLVVZ	66.4	66.1	65.1	65.7 L	65.8	1.22	2.3	0.6	66.4	1.28	2.7	0.8	8	XX
D9R9CJ	62.1 L	60.9	60.4	61.4	61.2	-0.87	1.8	0.7	61.5	-0.59	2.0	0.7	16	EM
DEBHCZ	62.6	62.6	62.2	63.1	62.6	-0.22	3.3	0.4 L	62.7	-0.12	3.5	2.4	16	LD
DNJ728	57.1	56.8*	59.6	60.5	58.5	-2.09*	2.1	1.8	59.8	-1.24	2.3	1.9	8	TD
EBW26W	64.5	62.3 L	64.1	63.2	63.5	0.18	2.4	1.0	64.3	0.49	2.9	1.0	16	LD
HNANE6	64.1	63.7	62.7	66.5	64.3	0.51	3.5	1.6	63.2	0.06	3.4	1.4	16	LC
HR6FM2	60.4	62.9	62.8	66.6 L	63.2	0.02	2.4	2.6	60.6	-0.95	2.7	3.3	16	LC
HVMQEY	58.8	57.9	57.8*	58.4	58.2	-2.21*	2.5	0.5	58.4	-1.81	2.8	0.6	7	EM
HXQWVZ	No Data	No Data	No Data	63.2	63.2	0.02	4.4	0.0 L	63.2	0.04	4.4	0.0 L	1	XX
HY3C4C	64.7	62.4	61.5	No Data	62.9	-0.11	2.9	1.7	63.2	0.05	2.7	1.7	14	LC
J9MV43	58.6	61.0	61.4	59.7	60.2	-1.33	3.1	1.3	63.7	0.27	3.4	3.1	16	LC
KAEUNM	60.2	59.0	60.2	No Data	59.8	-1.50	1.9	0.7	58.9	-1.61	2.6	1.6	15	LX
KWVHUY	55.0*	54.9 X	54.2 X	54.5 X	54.7	-3.82 X	2.9	0.4 L	56.8	-2.42*	2.8	2.4	8	TB
MBMHFD	62.3	65.9	64.5	66.1	64.7	0.71	2.5	1.8	66.3	1.25	2.9	1.9	16	LC
MHH2NZ	61.6	65.3	64.4	63.2	63.6	0.23	2.7	1.6	64.1	0.42	2.8	1.4	12	TM
MKUTQU	60.0	62.9	60.9	61.7	61.4	-0.79	2.8	1.2	61.4	-0.65	2.6	0.9	16	LC
MVP3ZW	65.7 H	63.1	62.9	63.1	63.7	0.26	4.0	1.4	63.9	0.31	3.8	3.5	12	LC
N9EMAF	64.9	64.6	67.9	67.7	66.3	1.42	2.4	1.8	65.1	0.78	2.5	1.5	16	XX
NDHWZT	69.2*	64.3	69.2*	68.4	67.8	2.10*	2.8	2.4	66.7	1.43	3.1	1.4	16	EM
NRKBF6	62.6	62.0	62.7	61.5	62.2	-0.41	2.1	0.6	62.2	-0.32	2.4	0.8	16	LD
PL3FLE	50.5 XH	52.0 X	52.5 XH	53.3 XH	52.1	-4.99 X	5.0	1.2	57.2	-2.25*	3.8	4.2 H	16	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
QKYGLC	63.5	61.9	64.4	62.5	63.1	-0.02	3.4	1.1	63.5	0.19	3.1	1.2	16	LC
QLT3E4	59.4	63.2	65.9	68.9 L	64.4	0.56	3.2	4.0	65.4	0.90	3.2	2.7	15	LZ
QUM886	66.1	64.8	69.8 *	67.9	67.1	1.81	3.2	2.2	65.3	0.89	4.0	1.9	16	LC
RUDZ3Y	64.2	66.0	64.7	67.1	65.5	1.08	3.1	1.3	65.6	0.99	2.8	1.4	16	LC
TNQXPA	No Data	No Data	61.3	58.3	59.8	-1.50	1.7	2.1	61.4	-0.62	2.6	1.4	12	LD
TRWR8L	62.6	62.6	60.6	61.0	61.7	-0.64	2.5	1.1	62.4	-0.26	2.5	0.8	16	LD
W8TVNA	64.7	64.8	62.6	62.2	63.6	0.21	2.7	1.4	63.6	0.21	2.7	1.4	4	LC
W8W2W3	69.4 *	46.6 X	70.7 *	No Data	62.2	-0.40	3.2	13.6 H	66.5	1.33	4.2	8.4 H	12	LZ
WADWH9	64.2	64.6	62.3	61.9	63.2	0.06	3.4	1.4	64.2	0.44	2.9	1.6	16	LZ
WWMCV	72.9 X	71.4 X	71.9 X	68.0	71.1	3.59 X	2.6	2.1	67.6	1.77	3.5	2.6	16	XX
XBKHQ8	63.1	65.6	64.1	63.1	64.0	0.39	3.0	1.2	63.8	0.28	2.9	1.7	16	LC
XV8CB2	64.5	65.5	67.1	65.8	65.7	1.18	2.9	1.1	66.2	1.21	2.9	1.1	12	LC
YH89RT	61.9	60.6	60.4	62.1	61.3	-0.84	2.4	0.9	60.0	-1.20	1.9	1.2	16	LC
YVW4AE	58.4	58.7	62.9	58.2 H	59.5	-1.63	3.7	2.3	59.5	-1.37	3.7	2.3	4	LC
YXAK2X	55.0 *H	56.7 *H	60.5	46.6 XH	54.7	-3.80 X	6.2	5.9 H	51.7	-4.37 X	5.0	8.4 H	14	LC
ZEMNHH	61.5	60.3	65.1	60.3 H	61.8	-0.61	4.8	2.3	62.8	-0.10	6.4	2.6	8	LC

**Consensus (All Labs) Results**

<b>Wk Mean</b>	62.66	62.78	63.51	63.67	<b>Month Mean</b>	63.12	<b>Grand Mean</b>	63.05
<b>Avg SDr</b>	3.20	3.26	2.66	2.96	<b>Avg SDr</b>	2.95	<b>Avg SDr</b>	3.18
<b>SD btwn Labs</b>	3.09	2.56	2.78	2.94	<b>SD btwn Labs</b>	2.21	<b>SD btwn Labs</b>	2.59
<b>Labs Includ</b>	46	44	46	43	<b>SD btwn Wks</b>	2.55	<b>SD btwn Wks</b>	2.28
<b>Labs Exclud</b>	2	4	3	3	<b>Labs Includ</b>	46	<b>Labs Includ</b>	49
<b>Labs not rcvd</b>	2	2	1	4				

**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)
- (TA) - Thwing-Albert Model QC II-XDS
- (TD) - TMI Digital Crush Tester, Model 17-09
- (XX) - Instrument make/model not specified by lab
- (LC) - L & W Crush Tester 48
- (LX) - L & W 506
- (MB) - Messmer Buchel K440
- (TB) - TMI Monitor/Compression Tester, 17-70
- (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
2G63LJ	68.6	66.7	65.9 L	69.4 L	67.7	-1.69	1.1	1.6	68.9	-1.36	1.5	1.3	16	XX
67AGCN	72.1	73.1	72.5	75.8	73.4	-0.10	1.8	1.7	72.8	-0.24	2.6	4.4 H	16	LC
69V3LY	77.1	73.1	73.5	76.4	75.0	0.35	2.6	2.0	74.8	0.33	2.4	1.4	16	TB
BP47AD	79.0	78.2	79.3	78.4	78.7	1.38	2.7	0.5	78.6	1.41	2.5	0.7	8	LC
D6F2DZ	78.3	78.1	78.7	77.4	78.1	1.21	2.3	0.5	78.3	1.34	2.4	0.8	16	LD
EE96F8	69.6	70.4	72.6	74.1	71.7	-0.58	2.6	2.1	72.9	-0.21	2.5	1.4	16	TD
EFLRZ7	75.3	74.4	73.8	74.5	74.5	0.21	2.3	0.6	75.1	0.41	2.6	0.8	12	MB
EMKQJN	78.8	81.2	78.8	82.2 *	80.2	1.80	2.4	1.7	79.5	1.68	2.6	1.6	16	XX
F8KJJC	78.6	77.7	76.4	No Data	77.6	1.05	2.6	1.1	77.6	1.14	2.7	1.4	15	LZ
FF6UKD	70.6	67.5	73.3	70.2	70.4	-0.93	3.2	2.3	69.9	-1.08	2.6	1.7	16	XX
GLJJEL	No Data	No Data	73.1	72.3	72.7	-0.29	2.1	0.5	74.1	0.14	2.5	0.9	12	LD
H7JUHT	70.7 L	70.2	70.3	70.1	70.3	-0.96	2.4	0.3	71.5	-0.61	1.9	0.8	16	LC
HNWWYU	72.0	73.8	72.1	76.8	73.7	-0.02	2.9	2.3	73.7	0.01	2.9	2.3	4	LC
MR9A2J	69.9	70.5	69.2	70.0	69.9	-1.06	2.7	0.5	69.4	-1.21	2.6	0.6	16	EM
UAFG2W	77.6 L	77.0	77.1	74.5 H	76.5	0.77	3.0	1.4	75.5	0.52	2.7	1.5	16	LC
XVTTQJ	73.2	74.2	73.4	74.7	73.9	0.03	2.0	0.7	69.9	-1.07	1.3	3.0 H	16	XX
ZL6UGB	70.3	69.9	67.8	70.2	69.5	-1.17	2.1	1.2	69.5	-1.20	2.0	1.1	16	LD

**Consensus (All Labs) Results**

<b>Wk Mean</b>	73.85	73.50	73.38	74.19	<b>Month Mean</b>	73.75	<b>Grand Mean</b>	73.65
<b>Avg SDr</b>	2.15	2.44	2.60	2.61	<b>Avg SDr</b>	2.45	<b>Avg SDr</b>	2.40
<b>SD btwn Labs</b>	3.85	4.14	3.82	3.65	<b>SD btwn Labs</b>	3.62	<b>SD btwn Labs</b>	3.49
<b>Labs Includ</b>	16	16	17	16	<b>SD btwn Wks</b>	1.41	<b>SD btwn Wks</b>	1.77
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	17	<b>Labs Includ</b>	17
<b>Labs not rcvd</b>	1	1	0	1				

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200 Series

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

(LC) - L & W Crush Tester 48

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

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

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

Containerboard Interlaboratory Testing Program  
Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM71  
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
2JL8MF	No Data	No Data	No Data	37.0	37.0	-1.96	1.3	0.0 L	36.2	-2.47*	1.6	1.1	2	XX
3HBYDZ	40.3	41.0	42.1	43.1	41.6	0.10	2.9	1.2	41.5	-0.11	2.6	0.9	16	TB
4H3L3A	40.7	41.3	41.3	41.1	41.1	-0.14	1.5	0.3	41.7	-0.05	1.8	0.9	16	TD
4X2XRZ	41.3	41.6	42.6	41.1	41.6	0.10	2.0	0.7	41.0	-0.36	1.8	1.0	16	EN
6P9JJT	44.4	40.3	40.7	No Data	41.8	0.17	2.0	2.2	45.0	1.44	2.9	2.5	12	MZ
ACAYEX	41.2	42.5 H	40.8	41.3	41.5	0.02	3.6	0.7	41.1	-0.30	3.2	0.8	16	LD
BL7KMG	44.6	43.2	43.0	42.9	43.4	0.89	1.9	0.8	43.7	0.85	2.1	1.4	16	LC
BQFBWW	39.4 L	38.1	38.3	38.0	38.5	-1.31	1.4	0.6	37.3	-2.01*	1.6	1.2	12	WK
F6FBKL	45.0	43.7	43.0 H	44.5	44.1	1.17	2.8	0.9	43.6	0.83	2.9	1.2	16	LC
JB948R	33.1 X	33.0 X	33.6 X	33.6*	33.3	-3.59 X	1.7	0.3	31.2	-4.70 X	1.9	2.3	8	XX
KAYWUV	42.2	42.4	44.1	42.9	42.9	0.65	2.5	0.8	42.2	0.17	2.1	1.2	16	LC
MNFDZ6	41.8	42.8	42.6	42.1	42.3	0.41	1.6	0.5	41.3	-0.24	1.6	0.9	16	LC
MQBA9Q	45.6	46.0	45.5	46.6	45.9	2.00*	2.6	0.5	44.7	1.29	2.3	1.4	16	LZ
NFN8BB	38.6	38.6	37.3*	38.4	38.2	-1.42	1.9	0.6	41.7	-0.05	2.0	3.7 H	12	EM
NNRNYV	41.8	43.0	42.9	41.9 H	42.4	0.43	2.9	0.6	43.6	0.79	2.6	2.1	16	LC
QBA9U2	40.0	40.8	38.9	39.9	39.9	-0.67	1.9	0.8	40.4	-0.64	2.2	0.8	16	LD
QMUR4	38.3	39.1	43.0	38.0	39.6	-0.80	2.0	2.3	40.7	-0.46	2.4	3.6 H	16	LC
RCY4UV	37.2 H	37.0	42.1	41.4	39.4	-0.89	3.3	2.7 H	41.2	-0.27	2.8	2.7	8	LX
VLWBEP	41.0	40.0	40.5	41.7	40.8	-0.27	1.9	0.7	41.6	-0.10	2.0	1.0	12	MB
WXHT39	44.1	44.8	45.7	45.1	44.9	1.56	2.3	0.6	44.9	1.39	2.3	0.6	4	LD
X9ZBAR	41.8	42.3	39.9	No Data	41.3	-0.04	2.5	1.3	42.5	0.30	2.3	2.6	14	LC

Consensus (All Labs) Results													
<b>Wk Mean</b>	41.55	41.49	41.79	41.09	<b>Month Mean</b>	41.41				<b>Grand Mean</b>	41.78		
<b>Avg SDr</b>	2.48	2.58	2.18	2.08	<b>Avg SDr</b>	2.32				<b>Avg SDr</b>	2.30		
<b>SD btwn Labs</b>	2.36	2.30	2.22	3.09	<b>SD btwn Labs</b>	2.25				<b>SD btwn Labs</b>	2.24		
<b>Labs Includ</b>	19	19	19	19	<b>SD btwn Wks</b>	1.19				<b>SD btwn Wks</b>	1.82		
<b>Labs Exclud</b>	1	1	1	0	<b>Labs Includ</b>	20				<b>Labs Includ</b>	20		
<b>Labs not rcvd</b>	1	1	1	2									



**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200 Series

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

(WK) - Zwick Z005 Crush Tester

(EN) - Emerson 2200 Series

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(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
2FN6WZ	15.9	15.3*	15.2	15.5	15.5	1.59	1.0	0.3	15.1	1.10	1.1	0.3	16	LU
6EBEX8	15.2	14.0L	15.4	15.1	14.9	0.51	1.4	0.6	14.5	-0.91	1.3	0.6	16	LZ
6FUBPZ	14.1	14.4	15.9	15.4	14.9	0.55	1.2	0.8H	14.9	0.47	1.2	0.8H	4	LW
7J97ZF	15.2	14.6	15.1	15.4	15.1	0.81	1.2	0.3	15.2	1.38	1.2	0.3	16	XX
8GNXV8	14.5	14.2	14.6	15.2	14.6	-0.10	1.1	0.5	14.9	0.38	1.2	0.4	16	LW
9NGLTW	14.9	14.8	14.9	15.1	14.9	0.46	1.1	0.1	14.8	0.10	1.1	0.2	8	XX
9U8ZNJ	14.0	14.6	14.4	14.1	14.3	-0.79	1.0	0.3	14.5	-1.01	1.0	0.5	16	LW
BAEQPE	13.9	14.3	14.0L	14.1	14.1	-1.15	0.6	0.2	14.7	-0.32	1.0	0.7	8	XX
JJ6VUD	13.7	14.6	14.0	14.0	14.1	-1.21	1.1	0.4	18.9	13.61X	1.6	4.7H	16	LZ
THZRNT	14.9	14.6	15.4	15.4	15.1	0.78	1.2	0.4	15.0	0.60	1.2	0.3	16	XX
TY894Z	13.7	14.1	14.2	13.8	14.0	-1.42	1.0	0.2	14.3	-1.79	1.1	0.4	15	LW

Consensus (All Labs) Results												
<b>Wk Mean</b>	14.54	14.50	14.82	14.83	<b>Month Mean</b>	14.67				<b>Grand Mean</b>	14.80	
<b>Avg SDr</b>	1.01	1.06	1.25	1.06	<b>Avg SDr</b>	1.10				<b>Avg SDr</b>	1.13	
<b>SD btwn Labs</b>	0.72	0.36	0.62	0.69	<b>SD btwn Labs</b>	0.50				<b>SD btwn Labs</b>	0.30	
<b>Labs Includ</b>	11	11	11	11	<b>SD btwn Wks</b>	0.43				<b>SD btwn Wks</b>	0.49	
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	11				<b>Labs Includ</b>	10	
<b>Labs not rcvd</b>	0	0	0	0								

**Instrument Code List as Reported by the Labs**

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

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

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

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