

Containerboard Interlaboratory Testing Program

Participant Summary Report #670 - July 2025

[Introduction to the Containerboard Program](#)

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

Analysis	Sample	Analysis Name
<u>201</u>	<u>BO18</u>	<u>Top to Bottom Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>EC17</u>	<u>Edgewise Compressive Strength, by T811, Corrugated Board</u>
<u>203</u>	<u>EC17</u>	<u>Edgewise Compressive Strength by T839, Corrugated Board</u>
<u>205</u>	<u>42L3</u>	<u>Bursting Strength (Mullen), 42 lb Linerboard</u>
<u>206</u>	<u>52M1</u>	<u>Bursting Strength (Mullen), 52 lb Linerboard</u>
<u>215</u>	<u>42L3</u>	<u>Ring Crush, 42 lb Linerboard</u>
<u>216</u>	<u>52M1</u>	<u>Ring Crush, 52 lb Linerboard</u>
<u>223</u>	<u>42L3</u>	<u>STFI, 42 lb Linerboard</u>
<u>224</u>	<u>52M1</u>	<u>STFI, 52 lb Linerboard</u>
<u>228</u>	<u>42L3</u>	<u>Roughness - Stylus Method, 42 lb Linerboard</u>
<u>229</u>	<u>42L3</u>	<u>Roughness - Sheffield Method, 42 lb Linerboard</u>
<u>231</u>	<u>42L</u>	<u>Internal Bond, 42 lb Linerboard</u>
<u>234</u>	<u>42L</u>	<u>COF Inclined Plane (Slide Angle), 42 lb Linerboard</u>
<u>237</u>	<u>42L3</u>	<u>Air Resistance, 42 lb Linerboard</u>
<u>240</u>	<u>CM13</u>	<u>Flat Crush Strength (CMT), 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM13</u>	<u>Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM13</u>	<u>Ring Crush (RCT), 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM13</u>	<u>STFI, 26 lb Corrugating Medium</u>

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; 31 lb. and 52 lb. - alternate months. The participants return their test results for analysis and receive a monthly report.

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

USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE

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

Material	Lot Code	Dates in Use
26# Corrugating Medium	CM13	September 2023 - Current
	CM12	June 2022 - August 2023
31# Linerboard	31K1	August 2024 - Current
	35E3	June 2022 - June 2024
42# Linerboard	42L3	March 2025 - Current
	42L2	Nov 2024 - Feb 2025
52# Linerboard	52M1	July 2025 - Current
	52J2	September 2024 - May 2025

ABOUT CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries including rubber, plastics, fasteners and metals, containerboard, paper, color, agriculture, hemp, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 100 countries, currently participate in the CTS programs.

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EXPLANATION OF TABLES

Each analysis is divided into three time spans. On the left side of the table are the individual laboratory results for each week of the month; in the center are each lab's statistical data for the month; and on the right are each lab's cumulative data for up to 16 weeks. At the bottom of the table are the consensus statistics for all the participants for each of the three time spans.

Definitions of Terms Used

Weekly Results

Laboratory Data

- WebCode - A six character laboratory identifier used to maintain information on a confidential basis. The WebCode is unique for each cycle and will change for each report. Your WebCode can be found in your Individual Report (Current Month Performance Report) and your datasheet.
- Weekly Means - The average of the test results obtained by the participant for each week that data were reported.

Consensus Data

- Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.
- Avg SD - For each week, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SD is an indication of the variation of measurements within an average laboratory.
- SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD LABS is an indication of the precision of measurement between the laboratories.
- Labs 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.
- SD - For each laboratory, the average of the weekly within-lab standard deviations (SD's) for all reported Weekly Means this month.
- SD Wk - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

Consensus Data

- Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.
- Avg SD - For the current month, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Group - For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks) for all the participants, excluding those laboratories flagged with an 'X'.

Cumulative Results

Laboratory Data

Mean	-	For each lab, the average of all the monthly Means reported for the weeks shown.
CPV	-	Comparative Performance Value , an indication of how well a laboratory's cumulative mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean).
SDr	-	For each laboratory, the average of the weekly within-lab standard deviations (SD's) for the weeks shown.
SD Wk	-	The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
Wks	-	The number of weeks included in the cumulative period.
Inst	-	The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

Consensus Data

Grand Mean	-	The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for the number of weeks included in the cumulative period.
Avg SD	-	For the cumulative period, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
SD btwn Labs	-	For the cumulative period, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
SD btwn Wks	-	For the cumulative period, the average of the laboratory between week standard deviations for all the participants, excluding those laboratories flagged with an 'X'.
Labs 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 recommended. |
| * | Included in the weekly means, monthly means and/or the cumulative mean; however, lab should review testing procedure and monitor future results. |

Flags assigned to Weekly Means:

- | | |
|---|--|
| H | Indicates high within-laboratory standard deviation. The laboratory SD for each week is not shown, but laboratory average SD and consensus average SD values are shown. |
| L | Indicates low within-laboratory standard deviation. The laboratory SD for each week is not shown, but laboratory monthly average SD and consensus average SD values are shown. |

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

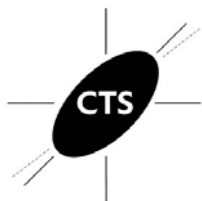
- | | |
|---|--|
| H | Indicates high variability between weekly means (high week-to-week variation). |
| L | Indicates low variability between weekly means (low week-to-week variation). |



Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BO18
 TAPPI Official Test Method T804

Report #670
July 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2BCAZ7	566.3	-0.05	22.53	531.8	-1.65	37.36	4	ER
3FJXD9	599.1	0.92	45.20	579.8	0.64	21.79	4	EX
3UH484	541.1	-0.80	53.03	560.4	-0.29	20.46	4	EX
4BMTW9	614.1	1.37	50.89	607.9	1.98 *	6.37	3	LG
4CW9GG	553.7	-0.43	40.09	573.4	0.33	19.47	4	LG
4QEY4	560.0	-0.24	46.99	562.2	-0.20	10.93	4	EX
7NGWE6	586.1	0.54	6.76 L	580.0	0.65	7.90	4	EX
84D7NB	537.8	-0.90	53.65	566.0	-0.02	20.34	4	LS
8DX63Z	623.4	1.65	38.19	595.6	1.39	26.90	4	LM
ACXLE4	562.6	-0.16	11.76	579.5	0.62	32.91	4	ET
BR46P2	553.4	-0.43	50.52	551.5	-0.72	2.56 L	4	LG
BR9LNY	601.8	1.00	23.62	603.4	1.76	13.73	4	EX
F2X47N	586.0	0.53	26.05	552.5	-0.67	54.06 H	4	ER
GA9M3T	589.9	0.65	23.43	562.0	-0.21	23.27	4	EX
GZXKGR	589.1	0.63	30.90	560.0	-0.31	24.66	4	EX
HBDW8U	626.4	1.73	30.57	632.3	3.15 X	11.23	4	ER
J639LZ	542.7	-0.75	32.42	543.2	-1.11	17.61	4	LG
M4ZCDK	545.0	-0.68	69.78	542.3	-1.15	9.55	4	ER
MFQ4XP	523.9	-1.31	32.79	560.1	-0.30	39.53	4	LS
PP6ZQL	481.1	-2.58 *	14.41	473.6	-4.44 X	26.70	4	TB
QJ4DQT	520.4	-1.42	21.23	571.3	0.23	38.36	4	EX
R9G98C	553.9	-0.42	33.51	531.8	-1.66	26.30	4	ER
RQ2Z7C	589.5	0.64	38.97	573.9	0.36	25.87	4	LO
THDVAT	592.6	0.73	36.38	569.9	0.17	16.77	4	LG
WXXLY7	574.3	0.19	44.11	580.0	0.65	12.16	3	LM
YGPDVN	537.4	-0.91	47.71	534.4	-1.53	9.10	4	LG
ZFA9YB	596.6	0.85	23.21	597.1	1.47	19.07	4	LG
ZJ7XH4	556.4	-0.35	26.68	557.7	-0.42	19.58	4	ES
Consensus (All Labs) Results								
Month Mean	568.03			Grand Mean	566.45			
Avg SD	37.61			Avg SD Months	24.36			
SD btwn Labs	33.65			SD btwn Labs	20.91			
Labs Incl	28			Labs Incl	26			



Containerboard Interlaboratory Testing Program
Analysis 201

Report #670
July 2025

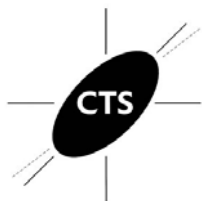
Top to Bottom Box Compression Strength, Corrugated Boxes - BO18
TAPPI Official Test Method T804

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	569.76	40.39	1.74	8
Clip sealing	564.22	29.29	3.80	19
Staple sealing	626.38	0.00	58.35	1

Key to Instrument Codes Reported by Participants

ER	Emerson 6200 Series	ES	Emerson 8510
ET	Emerson 7200	EX	Emerson Apparatus (Model not specified)
LG	TLS / L.A.B. Validator Series	LM	Lansmont 122-15k
LO	Lansmont 152-30k	LS	Lansmont Squeezer
TB	TMI Monitor/Compression Tester, Model 17-70		



Containerboard Interlaboratory Testing Program
 Analysis 202
Edgewise Compressive Strength, by T811, Corrugated Board - EC17
 TAPPI Official Test Method T811

Report #670
July 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
7NGWE6	48.8	1.28	0.99	49.2	1.50	0.48	2	TL
84D7NB	40.0	-0.58	2.31	38.8	-0.72	1.77	2	LD
8YFMLD	46.2	0.72	1.07	44.5	0.49	2.41	2	XX
BFC9EA	36.2	-1.39	2.02	36.5	-1.21	0.41	2	TS
GA9M3T	45.6	0.59	2.58	45.4	0.70	0.22	2	LC
QJ4DQT	43.8	0.21	1.16	43.2	0.22	0.78	2	LC
R9G98C	36.3	-1.37	3.55 H	35.8	-1.36	0.69	2	EN
THDVAT	45.3	0.54	1.50	44.0	0.39	1.88	2	EX
Consensus (All Labs) Results								
Month Mean			42.76	Grand Mean		42.16		
Avg SD			2.07	Avg SD Months		1.32		
SD btwn Labs			4.72	SD btwn Labs		4.68		
Labs Incl			8	Labs Incl		8		

Key to Instrument Codes Reported by Participants

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



Containerboard Interlaboratory Testing Program
 Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC17
 TAPPI Official Test Method T839

Report #670
July 2025

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
2BCAZ7	43.0	-1.05	1.45		41.5	-1.33	2.19	2	LD
4BMTW9	46.9	0.37	1.14		46.9	0.36	0.00	1	BU
4QEY4	40.6	-1.94 *	1.67		40.2	-1.72	0.51	2	LD
7FPBYD	47.6	0.61	0.87		48.5	0.85	1.27	2	EM
7NGWE6	48.6	0.96	0.80	L	49.2	1.06	0.87	2	TL
84D7NB	44.5	-0.50	1.09		44.4	-0.42	0.16	2	LD
8DX63Z	46.4	0.19	1.68		46.3	0.16	0.22	2	TG
8YFMLD	48.0	0.76	1.51		47.5	0.53	0.76	2	XX
9MKRPA	44.6	-0.48	0.90		45.4	-0.11	1.13	2	EM
ACXLE4	45.2	-0.25	2.19		46.5	0.23	1.82	2	TD
BFC9EA	42.4	-1.28	1.44		42.3	-1.08	0.18	2	TS
BR46P2	46.9	0.34	1.19		43.9	-0.59	4.25	2	EM
BR9LNY	45.4	-0.19	1.19		45.4	-0.13	0.06	2	CT
BTXMH9	43.9	-0.73	1.59		44.1	-0.51	0.28	2	TU
CCAYWX	51.9	2.18 *	1.20		51.3	1.73	0.78	2	TG
D3FBEZ	47.5	0.58	1.59		49.2	1.05	2.33	2	TE
F2X47N	47.4	0.55	1.69		46.9	0.34	0.78	2	LD
FCU89W	44.6	-0.48	1.43		45.3	-0.15	0.99	2	EM
GA9M3T	47.1	0.44	1.79		48.3	0.80	1.71	2	LC
GK8KQR	33.2	-4.65 X	1.26		33.4	-3.85 X	0.26	2	XX
HBDW8U	50.6	1.72	4.34	H	50.5	1.47	0.21	2	LD
J639LZ	47.7	0.66	1.73		47.5	0.54	0.32	2	MK
K8PYUN	33.0	-4.73 X	2.18		33.0	-3.98 X	0.00	1	IX
M4ZCDK	46.5	0.22	1.15		45.6	-0.05	1.26	2	EM
MFQ4XP	42.5	-1.25	0.89		42.4	-1.06	0.21	2	EM
PP6ZQL	48.1	0.79	0.43	L	48.7	0.89	0.81	2	LD
QJ4DQT	48.3	0.86	1.77		46.7	0.30	2.18	2	LC
R9G98C	41.9	-1.45	2.00		41.1	-1.44	1.12	2	EN
RHNFXT	44.2	-0.64	5.70	H	47.3	0.49	4.50	2	EM
RQ2Z7C	41.9	-1.47	1.78		41.2	-1.43	1.02	2	LD
RRTMDT	40.2	-2.10 *	1.83		40.2	-1.74	0.00	1	BU
THDVAT	45.0	-0.35	1.41		45.6	-0.07	0.85	2	LY
U8DM7G	48.0	0.76	1.50		49.7	1.21	2.37	2	LC
WXXLY7	46.5	0.20	1.87		46.9	0.36	0.66	2	EM
XAVLCB	36.7	-3.35 X	1.68		37.9	-2.45 *	1.64	2	TD
YX94UN	49.8	1.43	0.86		49.5	1.15	0.51	2	LD
ZFA9YB	46.9	0.36	1.70		47.5	0.55	0.91	2	EM
ZJ7XH4	46.4	0.17	1.81		46.5	0.22	0.13	2	LD



Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC17
TAPPI Official Test Method T839

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Consensus (All Labs) Results			
Month Mean	45.92	Grand Mean	45.77
Avg SD	1.88	Avg SD Months	1.55
SD btwn Labs	2.74	SD btwn Labs	3.22
Labs Incl'd	35	Labs Incl'd	36

Key to Instrument Codes Reported by Participants

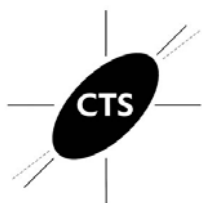
BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EN	Emerson 2200
IX	Instron (model not specified)	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W 830
MK	Mark-10 ESM303	TD	TMI Digital Crush Tester, Model 17-09
TE	TMI Monitor/Compression Tester, Model 17-60	TG	TMI Digital Crush Tester,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



Containerboard Interlaboratory Testing Program
 Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L3
 TAPPI Official Test Method T807

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	108.1	104.0 *	113.5	111.2	109.2	-1.20	7.7	4.1	109.4	-1.12	7.6	4.0	16	LZ
2LTW8L	115.0	116.2	114.2	116.4	115.4	0.32	7.9	1.0	119.3	1.24	9.1	5.7	12	LB
32HLG9	115.0 L	116.6	113.7	114.5	115.0	0.20	4.4	1.2	115.1	0.24	4.5	1.2	16	TP
3884VK	124.2 *	130.6 X	126.9 *	134.4 X	129.0	3.62 X	9.7	4.4	128.5	3.45 X	8.8	5.7	16	AX
4QEQY4	109.6	110.8 H	106.4	107.2	108.5	-1.37	10.4	2.0	108.9	-1.23	8.0	3.1	16	AH
677QP4	113.4 L	112.6 L	112.4 L	112.4 L	112.7	-0.35	1.4	0.5 L	116.2	0.51	1.2	3.0	16	LA
6EXZZY_AL	113.4	114.1	113.9	116.0	114.3	0.05	9.2	1.1	117.6	0.84	8.9	2.9	16	AL
6YLMH2_AL	No DATA	115.5	No DATA	117.5	116.5	0.57	6.9	1.5	116.7	0.62	7.4	3.7	10	AL
7FPBYD_AL	111.0	111.4	109.8	106.9	109.8	-1.06	7.3	2.1	105.5	-2.05 *	11.3	7.4 H	16	AL
7GKU2E_AL	114.8	115.5	115.4	112.1	114.4	0.07	8.0	1.6	113.0	-0.25	11.9	3.4	16	AL
84D7NB	113.7	113.9	111.2	109.4	112.1	-0.50	8.5	2.1	114.6	0.14	9.0	2.8	16	LA
9H4ZKE	124.6 *	124.1 *	127.4 *	122.1	124.6	2.53 *	6.3	2.2	122.9	2.10 *	6.2	2.9	16	LA
BR9LNY	116.0 L	118.0	119.5	123.0 *	119.1	1.21	8.6	3.0	118.1	0.95	8.3	2.7	16	XX
BXRGFA_AL	115.4 H	122.9 *	119.7	120.3	119.6	1.32	20.7	3.1	118.5	1.05	12.6	2.7	16	AL
CEEP2R	106.1	No DATA	109.5	112.0	109.2	-1.20	9.0	3.0	108.3	-1.39	7.1	2.3	15	LC
D3FBEZ	115.1 L	112.0	113.1	116.7	114.2	0.02	7.8	2.1	114.2	0.03	7.8	2.1	4	LC
F2X47N	113.8	111.5	111.6	110.5	111.9	-0.55	6.2	1.4	115.0	0.22	7.3	3.1	16	AH
F4N6AQ	111.0	No DATA	No DATA	No DATA	111.0	-0.76	6.2	0.0	107.9	-1.47	7.3	2.4	6	LJ
F4N6AQ_AL	121.2	No DATA	No DATA	No DATA	121.2	1.72	4.5	0.0	119.7	1.33	6.9	3.7	6	AL
FVQD2W	116.7	114.8	115.8	116.8	116.0	0.46	4.9	0.9	115.7	0.39	4.3	0.8 L	16	AH
G9QVRM_AL	115.7	112.2	112.7	114.2	113.7	-0.10	6.2	1.6	113.7	-0.09	6.0	2.9	16	XX
GA9M3T	114.4	115.0	117.4	111.4	114.6	0.11	7.1	2.5	113.8	-0.06	7.8	1.9	16	AH
HBDW8U	114.4	111.5	108.3	112.4	111.7	-0.60	7.4	2.5	113.7	-0.10	6.8	3.3	16	LA
HBDW8U_AL	112.8	116.9	115.0	118.4	115.8	0.39	8.0	2.4	114.1	0.01	7.8	2.8	12	AK
JGUPYK	110.8	106.9	107.6	108.1	108.4	-1.40	6.9	1.7	109.4	-1.13	8.0	1.9	16	LC
JZAYZL_AL	106.6	115.2	113.3	111.2	111.6	-0.62	8.6	3.7	112.7	-0.33	9.6	3.2	16	AL
KBMLLR	111.5	114.5	114.6	116.5	114.3	0.04	7.5	2.1	114.2	0.02	8.1	2.9	12	LC
KBMLLR_AL	110.7	115.7	116.8	122.5 *	116.5	0.56	8.6	4.8	117.0	0.71	8.6	3.5	12	AL
KTMZXY	106.6	107.9	106.7	112.3	108.4	-1.40	8.3	2.7	108.1	-1.42	8.3	2.6	16	XX
LB33GK	106.6	114.8	108.6	No DATA	110.0	-1.00	7.4	4.3	107.8	-1.50	7.5	3.1	11	AX
LB33GK_AL	112.4	114.9	112.4	No DATA	113.2	-0.22	6.8	1.4	111.0	-0.73	6.4	2.5	11	AL
LXXEFW	106.0	108.9	108.6	105.2	107.2	-1.69	8.1	1.8	107.0	-1.70	8.2	2.0	16	LA
M9TCRG	119.6	122.6 *	125.8 *	117.2	121.3	1.74	8.0	3.7	116.6	0.61	8.6	4.0	16	LA
M9TCRG_AL	110.3	116.0 L	115.2	118.2	114.9	0.19	5.7	3.3	114.6	0.12	5.7	2.3	16	AL
MANUTH	115.0	117.6	116.6	115.2	116.1	0.48	6.9	1.2	114.6	0.13	8.6	2.7	16	TB



Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L3
 TAPPI Official Test Method T807

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
MLHD8M	120.2	114.6	113.9	112.1	115.2	0.26	7.4	3.5	118.5	1.05	7.8	4.5	8	XX
MY7DYP	126.1 *	138.7 X	138.2 X	129.1 X	133.0	4.59 X	10.0	6.4 H	134.6	4.90 X	11.4	4.8	16	AX
NMPHAX_AL	114.0	113.9	111.4	112.9	113.1	-0.26	9.7	1.2	114.9	0.19	8.3	2.6	12	AL
NU7NUN	139.8 X	145.3 X	142.9 XH	145.7 X	143.4	7.11 X	12.6	2.7	148.3	8.18 X	13.2	5.6	12	XX
P28ZQK_AL	118.2	115.7	121.8	116.0	117.9	0.93	8.1	2.8	118.3	1.01	8.6	2.7	16	AL
P98KTF	114.7	112.1	116.4	112.1	113.8	-0.07	8.1	2.1	112.5	-0.39	8.3	2.1	16	LA
PP6ZQL	112.4	113.7	104.8	105.6	109.1	-1.22	5.2	4.6	108.5	-1.33	7.3	3.7	16	XX
Q9ZRCJ_AL	113.2	114.9	116.3	No DATA	114.8	0.17	9.1	1.5	115.4	0.32	10.6	5.2	14	AL
TDKRHA	119.4	No DATA	122.2	No DATA	120.8	1.62	7.0	2.0	119.2	1.22	7.1	1.4	8	AH
TWGZ2E_AL	108.0	108.2	111.5	113.9 L	110.4	-0.91	4.4	2.8	110.9	-0.76	5.5	2.2	16	AL
U32F6C_AL	117.8	115.6	121.2	134.8 XH	122.3	1.99 *	15.8	8.6 H	123.3	2.21 *	12.0	5.6	16	AL
V4Q4ZD	112.2	115.1	117.6	110.2	113.8	-0.09	6.3	3.3	115.7	0.38	8.3	3.0	16	LC
XDAGR8_AL	105.8	110.5	109.0	106.1	107.8	-1.53	6.7	2.3	107.7	-1.53	6.0	1.9	16	XX
YGJNJJ_AL	121.4	116.9	123.1	115.7	119.3	1.25	8.0	3.5	117.4	0.79	8.2	3.2	16	AL
ZJ7XH4	116.7	113.3	117.8	115.4	115.8	0.41	8.6	1.9	116.1	0.49	8.7	2.9	16	LA
ZTB6X4_AL	110.7	109.7	111.9	116.4	112.1	-0.48	8.5	2.9	112.7	-0.34	9.0	2.8	16	AL
Consensus (All Labs) Results														
Wk Mean	113.92	114.06	114.62	113.76	Month Mean		114.13		Grand Mean		114.08			
Avg SDr	9.24	7.30	7.63	7.74	Avg SD		8.19		Avg SD		8.12			
SD btwn Labs	4.91	3.91	5.37	4.47	SD btwn Labs		4.12		SD btwn Labs		4.19			
Labs Incl	49	44	46	41	SD btwn Wks		2.86		SD btwn Wks		3.25			
Labs Excl	1	3	2	4	Labs Incl		48		Labs Incl		48			
Labs not Rcvd	1	4	3	6										

Key to Instrument Codes Reported by Participants

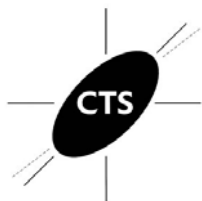
AH	Perkins Model AH	AK	L & W Autoline 300
AL	L & W Autoline 400	AX	Perkins Mullen Tester (model not specified)
LA	L&W Bursting Strength Tester	LB	L&W Burst-O-Matic
LC	L&W Autoline (205 Enrollment)	LJ	L&W Bursting Strength Tester J-Type
LZ	L&W (model not specified)	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 206
Bursting Strength (Mullen), 52 lb Linerboard - 52M1
 TAPPI Official Test Method T807

Report #670
July 2025

WebCode	Weekly Means				Monthly Results					Cumulative Results						Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks			
2BCAZ7	130.2	130.5	130.1	130.8	130.4	0.08	12.8	0.3	L	130.4	0.08	12.8	0.3	L	4	LZ
2LTW8L	113.1 *L	116.1 *	117.7 *	112.3 X	114.8	-3.24 X	7.6	2.5		114.8	-3.24 X	7.6	2.5		4	LB
32HLG9	119.9	122.4	123.1	122.7	122.0	-1.70	6.3	1.4		122.0	-1.70	6.3	1.4		4	TP
3884VK	148.7 *	154.0 X	138.4	155.5 X	149.2	4.07 X	12.0	7.7	H	149.2	4.07 X	12.0	7.7	H	4	AX
4QEQY4	126.0	128.4	133.2	128.4	129.0	-0.22	11.3	3.0		129.0	-0.22	11.3	3.0		4	AH
677QP4	119.8 L	119.0 L	118.8 *L	119.0 *L	119.2	-2.32 *	1.2	0.4	L	119.2	-2.32 *	1.2	0.4	L	4	LA
6EXZZY_AL	129.6 H	130.5	132.0	134.6	131.7	0.35	11.3	2.2		131.7	0.35	11.3	2.2		4	AL
6YLMH2_AL	No DATA	124.3	No DATA	125.3	124.8	-1.11	8.9	0.8		124.8	-1.11	8.9	0.8		2	AL
7FPBYD_AL	124.0	132.0	130.8	125.4	128.1	-0.42	11.4	3.9		128.1	-0.42	11.4	3.9		4	AL
7GKU2E_AL	134.2	130.7	126.5	126.2	129.4	-0.14	11.8	3.8		129.4	-0.14	11.8	3.8		4	AL
84D7NB	133.7	130.4	129.2	129.2	130.6	0.13	12.0	2.1		130.6	0.13	12.0	2.1		4	LA
9H4ZKE	143.5	139.7	142.3	142.6 *	142.0	2.55 *	6.1	1.6		142.0	2.55 *	6.1	1.6		4	LA
BR9LNY	137.5	142.5 *	142.5	143.5 *	141.5	2.44 *	14.0	2.7		141.5	2.44 *	14.0	2.7		4	XX
BXRGFA_AL	137.4	123.2	137.1	136.7	133.6	0.75	9.7	6.9		133.6	0.75	9.7	6.9		4	AL
CEEP2R	127.3	No DATA	122.3	128.3	126.0	-0.86	11.7	3.2		126.0	-0.86	11.7	3.2		3	LC
D3FBEZ	140.5	130.0	130.9	132.8	133.5	0.75	12.6	4.8		133.5	0.75	12.6	4.8		4	XX
F2X47N	128.2	132.8	131.3	131.9	131.1	0.22	10.1	2.0		131.1	0.22	10.1	2.0		4	AH
F4N6AQ	130.8	No DATA	No DATA	No DATA	130.8	0.16	7.9	0.0		130.8	0.16	7.9	0.0		1	LJ
F4N6AQ_AL	129.1	No DATA	No DATA	No DATA	129.1	-0.20	8.1	0.0		129.1	-0.20	8.1	0.0		1	AL
FVQD2W	123.5	124.8	124.5	128.5 L	125.3	-1.00	5.1	2.2		125.3	-1.00	5.1	2.2		4	AH
G9QVRM_AL	132.8	129.7	128.3	126.7	129.4	-0.14	6.3	2.6		129.4	-0.14	6.3	2.6		4	XX
GA9M3T	127.0	134.3	136.0	127.2	131.1	0.24	14.0	4.7		131.1	0.24	14.0	4.7		4	AH
HBDW8U	122.6	132.0	122.5	135.1	128.0	-0.42	7.9	6.5		128.0	-0.42	7.9	6.5		4	LA
HBDW8U_AL	127.2	134.2	135.6	138.4	133.8	0.81	9.9	4.8		133.8	0.81	9.9	4.8		4	XX
JGUPYK	126.0	128.0	124.9	127.7	126.7	-0.72	11.7	1.5		126.7	-0.72	11.7	1.5		4	LA
JZAYZL_AL	125.5	121.7	137.5	130.8	128.9	-0.25	9.3	6.9		128.9	-0.25	9.3	6.9		4	AL
KBMLLR	133.3 H	135.5	131.6	130.4	132.7	0.57	14.3	2.3		132.7	0.57	14.3	2.3		4	LC
KBMLLR_AL	136.8	132.5	133.8	135.2	134.6	0.97	12.6	1.8		134.6	0.97	12.6	1.8		4	XX
KTMZXY	125.0	129.3	130.1	125.1	127.4	-0.57	10.5	2.7		127.4	-0.57	10.5	2.7		4	XX
LB33GK	124.0	126.4	131.8	No DATA	127.4	-0.56	9.9	4.0		127.4	-0.56	9.9	4.0		3	AH
LB33GK_AL	124.6	128.7	127.0	No DATA	126.8	-0.69	8.1	2.1		126.8	-0.69	8.1	2.1		3	AL
LXXEFW	116.8	125.0	131.2	132.2	126.3	-0.80	10.3	7.1		126.3	-0.80	10.3	7.1		4	LA
M9TCRG	133.3	145.0 *	140.9	140.3	139.9	2.10 *	10.7	4.8		139.9	2.10 *	10.7	4.8		4	LA
M9TCRG_AL	131.1 L	131.7	132.2	127.4	130.6	0.12	7.3	2.2		130.6	0.12	7.3	2.2		4	AL
MANUTH	131.8	140.0	129.6	127.8	132.3	0.48	12.0	5.4		132.3	0.48	12.0	5.4		4	TB



Containerboard Interlaboratory Testing Program
Analysis 206
Bursting Strength (Mullen), 52 lb Linerboard - 52M1
 TAPPI Official Test Method T807

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
MLHD8M	137.6	135.3	131.2	129.8	133.5	0.73	11.6	3.6	133.5	0.73	11.6	3.6	4	XX
MY7DYP	151.4 *	142.7 *	145.5 *	151.4 X	147.8	3.77 X	13.4	4.4	147.8	3.77 X	13.4	4.4	4	XX
NMPHAX_AL	133.6	129.9	122.3	132.4	129.6	-0.10	11.6	5.1	129.6	-0.10	11.6	5.1	4	AL
NU7NUN	148.3 *	154.2 X	142.0	159.8 X	151.1	4.48 X	14.9	7.7 H	151.1	4.48 X	14.9	7.7 H	4	XX
P28ZQK_AL	132.1	133.7	130.9	138.5	133.8	0.80	12.5	3.3	133.8	0.80	12.5	3.3	4	AL
P98KTF	132.4	137.3	132.1	128.9	132.7	0.56	14.1	3.5	132.7	0.56	14.1	3.5	4	LA
PP6ZQL	122.4	120.7	128.5	122.8	123.6	-1.37	8.7	3.4	123.6	-1.37	8.7	3.4	4	XX
Q9ZRCJ_AL	128.1	130.9	134.0	No DATA	131.0	0.20	13.1	2.9	131.0	0.20	13.1	2.9	3	AL
TDKRHA	136.6	No DATA	133.8	No DATA	135.2	1.10	11.0	2.0	135.2	1.10	11.0	2.0	2	AH
TWGWZ2E_AL	118.9	123.1	119.1	120.2	120.3	-2.07 *	6.5	1.9	120.3	-2.07 *	6.5	1.9	4	AL
U32F6C_AL	132.9	132.0	136.7	128.8 H	132.6	0.55	12.7	3.3	132.6	0.55	12.7	3.3	4	AL
V4Q4ZD	134.2	128.0	131.7 H	138.2	133.0	0.63	14.4	4.3	133.0	0.63	14.4	4.3	4	LC
XDAGR8_AL	124.6	122.1	128.0	125.7	125.1	-1.05	10.0	2.4	125.1	-1.05	10.0	2.4	4	XX
YGJNJJ_AL	132.0	131.8	129.8	131.3	131.2	0.25	13.0	1.0	131.2	0.25	13.0	1.0	4	AL
ZJ7XH4	125.4	125.1	128.9	125.3	126.2	-0.82	11.7	1.8	126.2	-0.82	11.7	1.8	4	LA
ZTB6X4_AL	128.8	131.7	131.1	128.3	130.0	-0.01	11.1	1.6	130.0	-0.01	11.1	1.6	4	AL
Consensus (All Labs) Results														
Wk Mean	130.28	130.12	131.02	130.25	Month Mean		130.03		Grand Mean		130.03			
Avg SDr	11.14	10.64	11.02	10.69	Avg SD		10.75		Avg SD		10.75			
SD btwn Labs	7.84	6.31	6.26	5.68	SD btwn Labs		4.70		SD btwn Labs		4.70			
Labs Incl	50	45	48	41	SD btwn Wks		3.56		SD btwn Wks		3.56			
Labs Excl	0	2	0	4	Labs Incl		47		Labs Incl		47			
Labs not Rcvd	1	4	3	6										

Key to Instrument Codes Reported by Participants

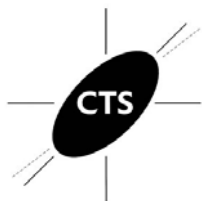
AH	Perkins Model AH	AL	L & W Autoline 400
AX	Perkins Mullen Tester (model not specified)	LA	L&W Bursting Strength Tester
LB	L&W Burst-O-Matic	LC	L&W Autoline (206 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
TB	TMI Monitor/Burst 1000	TP	Technidyne PROFILE/Plus
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42L3
TAPPI Official Test Method T822

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	96.0	96.0	95.9	97.6	96.4	0.06	2.9	0.8	97.1	0.07	2.9	1.3	16	LD
2LTW8L	102.5 H	100.7	102.2	100.1	101.4	1.30	4.2	1.2	103.5	1.88	3.7	3.3	12	LD
32HLG9	94.7	95.7	96.2	99.9	96.6	0.12	3.2	2.3	95.9	-0.28	3.1	1.6	16	TX
3884VK	96.1 H	100.3	105.9 *	76.2 XH	94.6	-0.37	7.8	12.9 H	101.9	1.44	6.4	9.6 H	16	LX
677QP4	94.2 L	94.3 L	94.1 L	94.1 L	94.2	-0.48	0.9	0.1 L	95.0	-0.51	0.7	0.6 L	16	TU
6YLMH2	92.9	94.7	96.1	95.0	94.7	-0.36	3.4	1.3	95.4	-0.41	3.2	1.4	16	LC
84D7NB	94.0	94.2	93.0	98.8	95.0	-0.28	2.4	2.6	93.6	-0.91	2.7	1.8	16	LD
8BRGQV	103.1	101.5	97.5 H	109.0 *	102.7	1.64	6.0	4.8	105.9	2.55 *	5.2	4.2	16	MB
9H4ZKE	92.0	93.4	95.5	94.1	93.8	-0.59	3.7	1.5	96.2	-0.19	3.3	5.0	16	LC
9MKRPA	93.1	97.3	95.2	94.1	94.9	-0.31	2.9	1.8	92.8	-1.15	3.4	2.7	16	EM
CCAYWX	99.8	99.0	100.7	99.6	99.8	0.90	2.8	0.7	98.4	0.44	3.1	1.7	16	TH
CEEP2R	92.8	No DATA	95.5	99.0	95.8	-0.09	2.8	3.1	95.4	-0.40	3.7	3.0	15	LD
D3FBEZ	98.8	99.5	95.9 H	96.4 H	97.7	0.38	4.8	1.8	97.7	0.23	4.8	1.8	4	MB
F2X47N	96.0	96.2	95.2	96.6	96.0	-0.03	2.5	0.6 L	95.3	-0.43	2.4	1.8	16	LD
GA9M3T	94.5	96.8	96.3	96.8	96.1	-0.01	2.6	1.1	97.1	0.07	2.4	1.2	16	LC
HNHHLZ	97.7	97.2	97.8	97.5	97.5	0.35	3.7	0.3 L	96.3	-0.16	3.4	1.6	8	XX
JGUPYK	94.9 L	95.3	96.8	95.0	95.5	-0.16	2.0	0.9	95.0	-0.53	2.4	1.3	16	LD
JZAYZL	99.4	100.7	99.5	100.1	99.9	0.94	2.3	0.6 L	99.4	0.73	2.8	1.0 L	16	LD
KBMLLR	89.4	89.3	89.6 L	90.7	89.8	-1.58	3.1	0.6 L	99.2	0.67	3.2	8.7 H	12	LD
LDBEYL	102.4	104.6 *L	104.5 L	102.8	103.5	1.83	1.6	1.1	101.8	1.39	2.3	2.1	16	LD
M9TCRG	93.7	90.4	90.1	92.9	91.8	-1.08	2.2	1.8	94.9	-0.56	3.0	3.0	16	LD
MANUTH	94.1	94.2	93.1	92.7	93.5	-0.64	2.9	0.8	95.5	-0.39	3.4	2.0	16	LD
MLHD8M	90.9 H	92.5 H	87.9 *	98.9 H	92.6	-0.89	6.5	4.6	95.3	-0.43	5.4	4.5	8	LD
MZHA7F	94.7	92.5	90.3	91.5	92.3	-0.96	2.6	1.9	92.5	-1.23	3.1	1.7	16	LD
N3L8EM	101.2	96.6 H	98.7 H	103.5	100.0	0.96	5.2	3.0	102.0	1.45	4.7	2.7	16	MB
NKKKMN	103.7 *L	104.6 *L	103.2	104.2	103.9	1.93 *	1.9	0.6 L	101.1	1.20	1.5	2.9	16	MZ
PP6ZQL	97.6	101.8	101.1	98.4	99.7	0.89	3.8	2.0	99.0	0.60	4.1	2.7	16	XX
Q9ZRCJ	97.3	95.6	98.4	No DATA	97.1	0.23	3.3	1.4	95.9	-0.27	3.5	1.2	15	LD
R9G98C	90.7 L	89.1	91.2	88.6	89.9	-1.54	2.4	1.2	89.9	-1.98 *	3.0	1.9	16	LC
THDVAT	94.5	94.6	94.6	96.1	95.0	-0.29	3.7	0.8	94.0	-0.80	3.0	1.4	16	LG
TM8TYK	100.4	102.8	100.4	104.4 L	102.0	1.45	1.8	2.0	99.8	0.83	1.5	2.4	12	MZ
U32F6C	74.9 XH	100.7	104.1	67.4 XH	86.8	-2.31 *	8.2	18.4 H	94.1	-0.78	6.8	14.2 H	16	LZ
U7H64F	90.0	91.7	92.6	92.6	91.7	-1.10	4.0	1.2	91.8	-1.44	3.5	4.6	16	EM
U8DM7G	98.4	99.3	98.1	100.4	99.0	0.72	3.4	1.0	97.1	0.06	3.7	2.2	16	LC
UNXE6F	60.9 XH	61.1 XH	60.9 XH	61.3 XH	61.0	-8.69 X	9.5	0.2 L	67.5	-8.33 X	10.0	4.8	12	LD



Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42L3
TAPPI Official Test Method T822

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
V4Q4ZD	97.2	96.5	99.5	101.3	98.6	0.61	2.5	2.2	99.6	0.78	2.7	2.3	16	LD
XAVLCB	96.2	96.3	96.1 L	96.6	96.3	0.04	1.7	0.2 L	97.6	0.21	1.7	0.9 L	16	MB
XDAGR8	94.2	96.0	94.1	95.2	94.9	-0.31	2.9	0.9	94.4	-0.71	2.5	1.1	16	LD
XP4WG9	87.1 *	92.4	89.0	87.0 *	88.9	-1.79	2.9	2.5	90.3	-1.85	2.6	2.5	8	LZ
ZTB6X4	99.1	98.9	100.4 L	99.4	99.4	0.82	2.6	0.7 L	99.8	0.84	2.7	1.3	16	LD

					Consensus (All Labs) Results			
Wk Mean	95.93	96.66	96.57	97.23	Month Mean	96.13	Grand Mean	96.86
Avg SDr	3.71	3.05	3.64	3.09	Avg SD	3.69	Avg SD	3.49
SD btwn Labs	3.96	3.93	4.39	4.60	SD btwn Labs	4.04	SD btwn Labs	3.53
Labs Incl	38	38	39	36	SD btwn Wks	4.02	SD btwn Wks	3.86
Labs Excl	2	1	1	3	Labs Incl	39	Labs Incl	39
Labs not Rcvd	0	1	0	1				

Key to Instrument Codes Reported by Participants

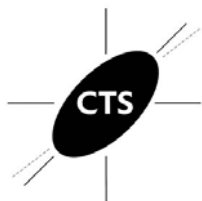
EM	Emerson 1200	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LG	L&W 753
LX	L&W 506	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
TX	TMI Digital Crush Tester (model not specified)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 216
Ring Crush, 52 lb Linerboard - 52M1
TAPPI Official Test Method T822

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	133.5	131.0	131.2	129.4	131.3	0.32	4.3	1.7	131.3	0.32	4.3	1.7	4	LD
2LTW8L	130.8	130.4	132.3	132.6	131.5	0.37	5.4	1.1	131.5	0.37	5.4	1.1	4	LD
32HLG9	129.9	128.4	129.0	135.0	130.6	0.16	5.8	3.0	130.6	0.16	5.8	3.0	4	TX
3884VK	120.5 *H	138.4	139.1	140.6	134.6	1.06	6.0	9.5 H	134.6	1.06	6.0	9.5 H	4	LY
677QP4	129.6 L	129.4 L	129.7 L	129.5 L	129.5	-0.06	0.8	0.1 L	129.5	-0.06	0.8	0.1 L	4	TU
6YLMH2	134.1	134.0	130.7	131.6	132.6	0.61	5.2	1.7	132.6	0.61	5.2	1.7	4	LC
84D7NB	127.0	131.9	123.6 L	130.7	128.3	-0.33	3.3	3.7	128.3	-0.33	3.3	3.7	4	LD
8BRGQV	133.4	128.8	115.6 *	135.3	128.2	-0.34	4.9	8.9	128.2	-0.34	4.9	8.9	4	TU
9H4ZKE	128.9	122.5	126.8	122.8	125.3	-0.99	5.2	3.1	125.3	-0.99	5.2	3.1	4	LC
9MKRPA	132.5	131.7	131.7	130.8	131.7	0.41	4.8	0.7 L	131.7	0.41	4.8	0.7 L	4	EM
CCAYWX	129.9	133.0	126.2	132.5	130.4	0.12	4.4	3.1	130.4	0.12	4.4	3.1	4	TH
CEEP2R	123.7	No DATA	127.2	128.6	126.5	-0.72	4.9	2.5	126.5	-0.72	4.9	2.5	3	LD
D3FBEZ	110.5 XH	116.9 *H	112.7 *H	120.7	115.2	-3.19 X	10.5	4.5	115.2	-3.19 X	10.5	4.5	4	MB
F2X47N	127.5	128.8	130.6	125.6	128.1	-0.37	4.7	2.1	128.1	-0.37	4.7	2.1	4	LD
GA9M3T	129.4	130.0	127.3	132.2	129.7	-0.02	3.8	2.0	129.7	-0.02	3.8	2.0	4	LC
HNNHLZ	130.8	132.1	129.6	127.1	129.9	0.02	3.8	2.1	129.9	0.02	3.8	2.1	4	LZ
JGUPYK	126.2	129.2	127.8	129.4	128.1	-0.36	4.5	1.5	128.1	-0.36	4.5	1.5	4	LD
JZAYZL	134.6	136.5	138.2	138.7	137.0	1.57	3.6	1.9	137.0	1.57	3.6	1.9	4	LD
KBMLLR	125.8	125.6	119.9	125.9	124.3	-1.20	4.6	2.9	124.3	-1.20	4.6	2.9	4	LD
LDBEYL	134.8	134.3	133.2	134.1	134.1	0.93	3.6	0.7 L	134.1	0.93	3.6	0.7 L	4	LD
M9TCRG	127.8	124.6	123.2	125.6 L	125.3	-0.98	3.7	1.9	125.3	-0.98	3.7	1.9	4	LD
MANUTH	125.2	126.7	129.4	128.0	127.3	-0.54	4.7	1.8	127.3	-0.54	4.7	1.8	4	LD
MLHD8M	137.0 H	140.4 H	136.4 H	140.0 H	138.5	1.89	11.0	2.0	138.5	1.89	11.0	2.0	4	LD
MZHA7F	128.4	127.6	126.3	125.2	126.9	-0.64	4.1	1.4	126.9	-0.64	4.1	1.4	4	LD
N3L8EM	130.2	135.5	129.8	139.4	133.7	0.85	4.3	4.6	133.7	0.85	4.3	4.6	4	MB
NKKKMN	135.0	142.5 *	141.2	144.5 *	140.8	2.40 *	2.5	4.1	140.8	2.40 *	2.5	4.1	4	MZ
PP6ZQL	129.9	132.8	126.9	130.4	130.0	0.04	4.9	2.4	130.0	0.04	4.9	2.4	4	XX
Q9ZRCJ	128.6	129.1	130.7	No DATA	129.5	-0.07	5.0	1.1	129.5	-0.07	5.0	1.1	3	LD
R9G98C	122.0 L	121.7	120.8	119.5	121.0	-1.92	3.1	1.2	121.0	-1.92	3.1	1.2	4	EN
THDVAT	127.9	128.5	131.7	129.5	129.4	-0.09	4.0	1.7	129.4	-0.09	4.0	1.7	4	LY
TM8TYK	137.8 *	133.5 L	139.7	134.9	136.5	1.46	2.4	2.8	136.5	1.46	2.4	2.8	4	MZ
U32F6C	98.3 XH	135.8	136.2	142.0	128.1	-0.37	7.7	20.0 H	128.1	-0.37	7.7	20.0 H	4	LZ
U7H64F	121.0 *	118.0 *	119.8	119.5	119.6	-2.24 *	4.2	1.2	119.6	-2.24 *	4.2	1.2	4	EM
U8DM7G	128.6	127.0	127.1	127.8	127.6	-0.47	4.1	0.8	127.6	-0.47	4.1	0.8	4	LC
UNXE6F	97.3 XH	95.3 XH	97.1 XH	95.3 XH	96.3	-7.32 X	13.6	1.1	96.3	-7.32 X	13.6	1.1	4	LD



Containerboard Interlaboratory Testing Program
Analysis 216
Ring Crush, 52 lb Linerboard - 52M1
TAPPI Official Test Method T822

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
V4Q4ZD	134.7	131.7	131.5	131.1	132.2	0.53	3.0	1.6	132.2	0.53	3.0	1.6	4	LD
XAVLCB	128.6 L	128.3 L	128.4 L	128.6 L	128.5	-0.29	1.7	0.2 L	128.5	-0.29	1.7	0.2 L	4	MB
XDAGR8	128.8	128.6	126.2	131.5	128.8	-0.23	4.6	2.2	128.8	-0.23	4.6	2.2	4	LD
XP4WG9	124.5	123.8	122.6	115.1 *	121.5	-1.81	3.2	4.3	121.5	-1.81	3.2	4.3	4	LZ
ZTB6X4	134.7	133.6	139.4	135.6	135.8	1.31	4.3	2.5	135.8	1.31	4.3	2.5	4	LD

Consensus (All Labs) Results														
Wk Mean	129.55	130.07	128.96	130.56	Month Mean	129.81		Grand Mean	129.81					
Avg SDr	4.91	4.81	4.86	4.29	Avg SD	4.66		Avg SD	4.66					
SD btwn Labs	4.28	5.45	6.40	6.48	SD btwn Labs	4.58		SD btwn Labs	4.58					
Labs Incl	37	38	39	38	SD btwn Wks	4.47		SD btwn Wks	4.47					
Labs Excl	3	1	1	1	Labs Incl	38		Labs Incl	38					
Labs not Rcvd	0	1	0	1										

Key to Instrument Codes Reported by Participants

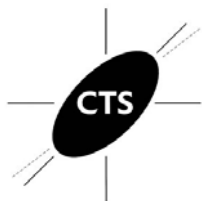
EM	Emerson 1200	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LY	L&W Crush Tester 958	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
TX	TMI Digital Crush Tester (model not specified)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
 Analysis 223
STFI, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T826

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	24.6	24.0	24.5	24.6	24.4	-0.47	1.5	0.3	24.7	-0.49	1.5	0.4	16	LY
2LTW8L	25.9	24.2 H	24.7	23.9	24.7	-0.32	1.8	0.9	25.7	0.27	1.9	1.4	12	LU
3884VK	23.0 H	30.5 XH	22.3	26.9	25.7	0.32	7.3	3.8 H	26.4	0.77	4.1	5.4 H	16	LZ
677QP4	24.9	24.5	25.0	24.8	24.8	-0.23	1.3	0.2	24.7	-0.47	1.8	0.9	16	XX
6EXZZY_AL	23.8	24.2	23.1	22.1 *	23.3	-1.22	1.5	0.9	23.5	-1.36	1.7	0.6	16	AL
6YLMH2	No DATA	25.4	No DATA	25.5	25.4	0.18	1.5	0.1	26.0	0.48	1.8	0.8	10	LU
7FPBYD_AL	25.5	26.1	25.1	25.4	25.5	0.24	1.4	0.4	25.9	0.43	1.5	0.6	16	AL
7GKU2E_AL	30.6 X	32.3 X	31.7 XH	31.6 X	31.5	4.13 X	2.1	0.7	31.6	4.68 X	2.1	0.7	16	AL
84D7NB	23.5	23.6	23.7	25.4	24.1	-0.71	1.6	0.9	24.0	-0.97	1.4	0.5	16	LY
8BRGQV	27.8	28.3 *	27.9	27.5 H	27.9	1.76	2.0	0.3	28.0	1.99 *	1.9	0.7	16	LA
8WBNZ4	22.4 L	23.2 L	22.8 L	22.3 *L	22.7	-1.61	0.6	0.4	22.7	-1.99 *	0.7	0.3	16	TT
9H4ZKE	25.5	24.7	24.8	26.4	25.4	0.12	1.3	0.8	25.3	-0.02	1.5	0.6	16	LA
BWWYE9	26.8	27.6	26.9	29.5 X	27.7	1.65	1.8	1.3	27.2	1.41	1.8	0.9	16	LU
BXRGFA_AL	25.1	27.8 H	28.8 *	28.2 *	27.5	1.48	1.9	1.6	27.9	1.89	2.0	1.6	16	AL
CEEP2R	26.8	No DATA	25.4	25.8	26.0	0.54	1.8	0.7	27.1	1.30	2.1	0.9	15	LA
D3FBEZ	27.6	27.9	27.9	25.5	27.2	1.33	1.6	1.2	26.2	0.66	1.6	1.3	16	LA
E7BU86	25.5	25.6	26.0	26.6	25.9	0.50	1.4	0.5	26.1	0.59	1.5	0.4	12	LH
F2X47N	24.5	24.2	24.1	24.5	24.3	-0.54	1.8	0.2	24.3	-0.80	1.7	0.3	16	LU
F4N6AQ	21.6 *	No DATA	No DATA	No DATA	21.6	-2.33 *	1.5	0.0	23.1	-1.69	1.6	0.9	6	LY
F4N6AQ_AL	21.0 *L	No DATA	No DATA	No DATA	21.0	-2.69 *	0.8	0.0	22.8	-1.88	1.1	1.1	5	AL
G9QVRM_AL	26.0	25.8	26.7	25.9	26.1	0.61	1.7	0.4	26.1	0.61	1.7	0.7	16	XX
GA9M3T	25.2	24.6	24.4	24.4	24.6	-0.35	1.8	0.4	24.6	-0.57	1.6	0.4	16	LU
GK8KQR	23.1 L	24.2 L	25.2 L	24.3 L	24.2	-0.62	0.1	0.9	25.1	-0.21	1.5	0.9	16	XX
HBDW8U_AL	20.2 X	22.5	22.6	24.4	22.4	-1.78	1.7	1.7 H	23.6	-1.29	1.9	1.6	12	AK
HNHHLZ	24.7	26.2	24.8	26.0 L	25.5	0.19	1.7	0.8	24.7	-0.47	1.4	1.0	8	LZ
HTDCJ3	24.6 H	23.6	23.2	24.4 H	24.0	-0.78	2.3	0.6	24.3	-0.79	2.6	0.7	16	LH
JGUPYK	24.5	24.5 L	24.5	24.4	24.5	-0.44	1.3	0.0 L	24.8	-0.42	1.3	0.5	16	LA
JKGA4N	24.6	25.5	25.4	24.5	25.0	-0.11	1.8	0.5	25.8	0.36	2.1	0.8	16	LH
JZAYZL_AL	25.8	25.5 L	24.8	24.7	25.2	0.05	1.2	0.5	25.1	-0.19	1.3	0.9	16	AL
KBMLLR	23.5	22.7	22.4	23.1	22.9	-1.43	1.8	0.5	24.6	-0.53	1.8	1.8	12	LZ
KBMLLR_AL	39.9 XL	40.1 XL	39.8 XL	42.8 XL	40.7	10.04 X	0.0	1.4	42.3	12.71 X	0.0	2.1	12	AL
KTMZXY	26.9	26.5	27.1	26.5	26.8	1.03	1.9	0.3	27.3	1.51	1.9	0.5	16	LH
LB33GK	26.9	26.0	26.9	No DATA	26.6	0.93	1.5	0.5	26.8	1.11	1.7	0.5	11	LU
LB33GK_AL	25.4	25.3	24.5	No DATA	25.1	-0.05	1.5	0.5	25.7	0.29	1.5	0.8	11	AL
LDBEYL	25.8	26.3	25.3	26.2	25.9	0.48	1.6	0.5	25.9	0.46	1.5	0.4	16	LH

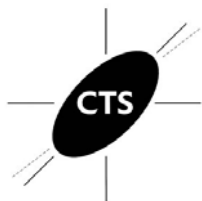


Containerboard Interlaboratory Testing Program
 Analysis 223
STFI, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T826

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
LXXEFW	27.9	27.5	27.8	26.2	27.4	1.42	1.8	0.8	27.7	1.76	2.0	0.6	16	LH
M9TCRG_AL	25.1 L	24.6	25.4	25.6	25.2	0.00	1.4	0.4	24.8	-0.43	1.5	1.4	16	AL
MANUTH	24.5	22.0 *H	24.1 H	24.7	23.8	-0.86	2.0	1.2	24.7	-0.47	2.0	0.9	16	LW
MY7DYP	25.8 L	25.8 L	25.7 L	25.2 L	25.6	0.29	0.0	0.3	26.0	0.48	0.0	0.8	16	LH
N3L8EM	26.3	26.4	25.8	27.5	26.5	0.85	1.9	0.7	26.0	0.52	1.7	0.9	16	LA
NKKKMN	24.8 L	25.9 L	25.4 L	24.0 L	25.0	-0.09	0.8	0.8	24.9	-0.33	0.8	0.7	16	LZ
NMPHAX_AI	27.9 L	27.8 L	29.1 *L	28.5 *L	28.3	2.05 *	0.0	0.6	90.1	48.61 X	0.0	101.7 H	16	AL
NU7NUN	26.1 H	24.8	26.0	25.8	25.7	0.33	2.2	0.6	25.8	0.36	2.0	0.7	12	XX
P28ZQK_AL	24.0	24.7	24.8	24.7	24.5	-0.40	1.6	0.3	25.3	0.01	3.5	1.1	16	AL
P98KTF	25.3	25.2	24.3	24.9	24.9	-0.16	1.6	0.4	25.3	0.00	1.6	0.7	16	LY
Q9ZRCJ_AL	25.7	25.5	25.3	No DATA	25.5	0.22	1.9	0.2	24.9	-0.33	1.6	1.1	15	AL
QJ4DQT	23.9	23.3 L	23.3 L	23.7	23.6	-1.04	1.0	0.3	22.8	-1.91	1.5	0.9	16	LZ
R9G98C	23.2	21.7 *	23.2	23.1	22.8	-1.53	1.7	0.7	23.0	-1.74	1.7	0.6	16	LZ
RQ2Z7C	25.9	25.9	26.3	25.1	25.8	0.41	1.7	0.5	25.6	0.17	1.6	0.5	16	LH
TDKRHA	28.0	No DATA	27.7	No DATA	27.8	1.72	1.7	0.2	28.0	2.03 *	1.7	0.6	8	LU
THDVAT	25.9	25.1	25.7 L	25.3	25.5	0.21	1.4	0.3	25.3	0.01	1.5	0.3	16	BK
TM8TYK	25.0 L	24.7 L	24.9 L	24.2 L	24.7	-0.30	0.8	0.4	24.7	-0.51	0.8	0.4	12	LZ
TWGZ2E	26.4	25.9	26.1	25.5	26.0	0.52	1.6	0.4	25.5	0.13	1.5	0.6	15	LU
U32F6C_AL	24.2 L	24.0	24.4	24.1 L	24.1	-0.66	1.1	0.2	24.2	-0.83	1.4	0.5	16	AL
UNXE6F	24.1	23.9	24.1	24.2	24.1	-0.71	1.9	0.1	24.5	-0.62	1.9	0.7	12	LY
UNXE6F_AL	23.9	24.2	24.6	24.1	24.2	-0.63	2.0	0.3	24.6	-0.55	1.9	0.5	12	AL
V4Q4ZD	25.6	25.5	26.7	26.3	26.0	0.54	1.6	0.6	25.8	0.36	1.6	1.2	16	LA
VGE99A	24.2	24.3	23.9 L	24.2	24.2	-0.65	1.3	0.2	24.2	-0.81	1.5	0.6	16	LW
VWUZMM	25.9	25.9	24.3	24.6	25.2	0.00	1.6	0.9	25.9	0.41	1.7	0.8	16	LH
XDAGR8_AL	23.8	24.5	25.1	24.7	24.5	-0.41	1.6	0.6	24.4	-0.67	1.6	0.5	16	XX
XP4WG9	87.1 X	92.4 X	89.0 XH	87.0 XH	88.9	41.24 X	2.9	2.5 H	57.0	23.76 X	2.1	34.1 H	8	XX
YGJNJJ_AL	26.3	26.8	27.9	27.6	27.2	1.29	2.0	0.7	26.9	1.21	1.8	1.0	16	AL
Z7JNTD	28.0	27.5	28.7 *	28.0 *	28.1	1.87	1.8	0.5	28.1	2.04 *	1.8	0.5	4	LA
ZTB6X4_AL	24.6	25.0	26.1	25.0	25.2	0.00	2.0	0.6	25.0	-0.28	1.7	0.7	16	AL

					Consensus (All Labs) Results			
Wk Mean	25.16	25.16	25.30	25.20	Month Mean	25.16	Grand Mean	25.33
Avg SDr	1.80	1.61	1.62	1.61	Avg SD	1.86	Avg SD	1.78
SD btwn Labs	1.53	1.49	1.63	1.38	SD btwn Labs	1.54	SD btwn Labs	1.33
Labs Incl	59	56	58	54	SD btwn Wks	0.82	SD btwn Wks	1.09
Labs Excl	4	4	3	4	Labs Incl	61	Labs Incl	60
Labs not Rcvd	1	4	3	6				



Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42L3

TAPPI Official Test Method T826

Report #670

July 2025

Analysis Notes

GK8KQR - Data appears to be switched between Analysis 223 and Analysis 261 for Week 1. Data switched by CTS.

Key to Instrument Codes Reported by Participants

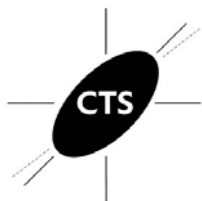
AK	L & W Autoline 300	AL	L & W Autoline 400
BK	Buchel Strip Compression Tester BK-155	LA	L&W Autoline (223 Enrollment)
LH	L&W 282	LU	L&W 52 without moisture correction(was 53)
LW	L&W 53 with moisture correction (was 53M)	LY	L&W 152 without moisture correction
LZ	L&W (model not specified)	TT	TMI Short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



Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52M1
 TAPPI Official Test Method T826

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	30.3	30.6	30.7	30.2	30.4	-0.25	2.5	0.2 L	30.4	-0.25	2.5	0.2 L	4	LZ
2LTW8L	31.4	30.6	29.2	29.5	30.2	-0.42	2.7	1.0	30.2	-0.42	2.7	1.0	4	LU
3884VK	27.5	49.0 X	27.7	30.5	33.7	1.99 *	2.8	10.3 H	33.7	1.99 *	2.8	10.3 H	4	LZ
677QP4	32.9	32.7 L	32.5 L	32.8 L	32.7	1.34	1.3	0.2 L	32.7	1.34	1.3	0.2 L	4	XX
6EXZZY_AL	29.3	30.0	28.3	28.2	28.9	-1.28	2.0	0.9	28.9	-1.28	2.0	0.9	4	AL
6YLMH2	No DATA	32.7	No DATA	30.8	31.7	0.66	2.7	1.3	31.7	0.66	2.7	1.3	2	LU
7FPBYD_AL	31.3	30.9	30.9	30.9	31.0	0.12	2.1	0.2 L	31.0	0.12	2.1	0.2 L	4	AL
7GKU2E_AL	36.4 X	38.2 X	37.5 X	36.2 XH	37.1	4.36 X	2.9	1.0	37.1	4.36 X	2.9	1.0	4	AL
84D7NB	31.2	29.7	29.0	31.5	30.4	-0.30	2.5	1.2	30.4	-0.30	2.5	1.2	4	LZ
8BRGQV	33.0	33.7 *	32.5	31.9	32.8	1.38	2.5	0.8	32.8	1.38	2.5	0.8	4	LA
8WBNZ4	26.9 *L	28.8 L	28.9	29.3	28.5	-1.61	1.5	1.1	28.5	-1.61	1.5	1.1	4	TT
9H4ZKE	33.6 L	33.1	33.8 *	33.9 *	33.6	1.95 *	1.6	0.4	33.6	1.95 *	1.6	0.4	4	LA
BWWYE9	31.9	32.7	32.3	34.0 *	32.7	1.35	2.5	0.9	32.7	1.35	2.5	0.9	4	LU
BXRGFA_AL	31.5	31.1	31.9 H	31.7	31.6	0.53	2.9	0.4	31.6	0.53	2.9	0.4	4	AL
CEEP2R	30.7	No DATA	30.1	29.4	30.0	-0.52	2.4	0.6	30.0	-0.52	2.4	0.6	3	LA
D3FBEZ	31.3	31.2 L	32.3	29.0	30.9	0.10	2.2	1.4	30.9	0.10	2.2	1.4	4	LA
E7BU86	31.3	31.2 L	32.0	31.5	31.5	0.51	1.5	0.3	31.5	0.51	1.5	0.3	4	LH
F2X47N	30.3	30.2 H	29.8	29.5	29.9	-0.60	2.9	0.4	29.9	-0.60	2.9	0.4	4	LU
F4N6AQ	27.3 *	No DATA	No DATA	No DATA	27.3	-2.40 *	1.9	0.0	27.3	-2.40 *	1.9	0.0	1	LH
F4N6AQ_AL	28.6	No DATA	No DATA	No DATA	28.6	-1.52	2.4	0.0	28.6	-1.52	2.4	0.0	1	AL
G9QVRM_AL	30.5	31.8 H	31.7	31.5	31.4	0.40	2.7	0.6	31.4	0.40	2.7	0.6	4	XX
GA9M3T	30.4	39.8 X	31.2	31.6	33.2	1.70	2.3	4.4 H	33.2	1.70	2.3	4.4 H	4	LU
GK8KQR	27.9	29.2	28.9	30.2	29.1	-1.20	2.6	0.9	29.1	-1.20	2.6	0.9	4	XX
HBDW8U_AL	26.6 *	28.2 *	28.0	28.3	27.8	-2.11 *	1.9	0.8	27.8	-2.11 *	1.9	0.8	4	XX
HNHHLZ	30.9	30.6 H	31.1	29.8	30.6	-0.12	2.8	0.6	30.6	-0.12	2.8	0.6	4	LZ
HTDCJ3	40.8 X	29.9 H	29.1 H	No DATA	33.3	1.73	3.5	6.5 H	33.3	1.73	3.5	6.5 H	3	LH
JGUPYK	29.6	30.8	29.8	30.6	30.2	-0.40	2.1	0.6	30.2	-0.40	2.1	0.6	4	LW
JKGA4N	30.1	29.6	31.2 H	29.3	30.1	-0.51	3.0	0.8	30.1	-0.51	3.0	0.8	4	LZ
JZAYZL_AL	32.3	29.1	29.2	30.3	30.2	-0.38	1.7	1.5	30.2	-0.38	1.7	1.5	4	AL
KBMLLR	28.6 H	29.7	27.1 *	29.7	28.8	-1.39	2.7	1.2	28.8	-1.39	2.7	1.2	4	LZ
KBMLLR_AL	48.2 XL	49.4 XL	48.7 XL	52.4 XL	49.7	13.13 X	0.0	1.9	49.7	13.13 X	0.0	1.9	4	XX
KTMZXY	30.7	32.5	32.4	32.0	31.9	0.77	2.6	0.8	31.9	0.77	2.6	0.8	4	LH
LB33GK	32.0	31.2	30.4	No DATA	31.2	0.28	2.0	0.8	31.2	0.28	2.0	0.8	3	LA
LB33GK_AL	30.9	31.3	31.6	No DATA	31.3	0.32	1.8	0.4	31.3	0.32	1.8	0.4	3	AL
LDBEYL	32.8	32.9	33.3 *	33.8 *	33.2	1.68	2.4	0.5	33.2	1.68	2.4	0.5	4	LH



Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52M1
TAPPI Official Test Method T826

Report #670
July 2025

Consensus (All Labs) Results															
Wk Mean	30.65	30.83	30.50	30.73	Month Mean	30.79				Grand Mean	30.79				
Avg SDr	2.23	2.32	2.38	2.32	Avg SD	2.32				Avg SD	2.32				
SD btwn Labs	1.68	1.35	1.46	1.44	SD btwn Labs	1.44				SD btwn Labs	1.44				
Labs Incl	58	54	57	52	SD btwn Wks	1.90				SD btwn Wks	1.90				
Labs Excl	5	6	4	4	Labs Incl	60				Labs Incl	60				
Labs not Rcvd	1	4	3	8											



Containerboard Interlaboratory Testing Program
Analysis 224
STFI, 52 lb Linerboard - 52M1
TAPPI Official Test Method T826

Report #670
July 2025

Key to Instrument Codes Reported by Participants

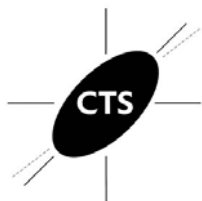
AL	L & W Autoline 400	BK	Buchel Strip Compression Tester BK-155
LA	L&W Autoline (224 Enrollment)	LH	L&W 282
LU	L&W 52 without moisture correction (was 53)	LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 with moisture correction	LZ	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab



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

Report #670
July 2025

WebCode	Monthly Results					Cumulative Results						
	Mean	CPV	SD			Mean	CPV	SD Months	Months	Inst		
2BCAZ7	186.9	-0.04	12.01			190.3	0.19	3.50	L	4	EV	
3UH484	241.5	1.65	17.63			222.8	1.48	13.08		4	LS	
6EXZZY_AL	249.1	1.88	26.26			186.5	0.04	41.79		4	AL	
6YLMH2	173.1	-0.47	11.95			187.9	0.10	36.85		3	EV	
7FPBYD_AL	181.3	-0.21	15.31			182.5	-0.12	5.69		4	AL	
7GKU2E_AL	81.1	-3.31	X	6.12	L	89.7	-3.80	X	7.51		4	AL
84D7NB	171.7	-0.51		18.46		175.2	-0.41		4.58		4	LS
8BRGQV	188.7	0.02		19.72		220.6	1.40	50.89	H	4	LA	
8WBNZ4	175.4	-0.40		17.33		200.8	0.61	36.11		4	EV	
BXRGFA_AL	183.2	-0.16		28.22		191.2	0.23	11.09		4	AL	
CEEP2R	144.0	-1.37		20.91		171.6	-0.55	38.55		4	LA	
D3FBEZ	195.1	0.21		39.11	H	199.9	0.57	12.37		4	LA	
F2X47N	199.3	0.34		16.71		194.3	0.35	4.25		4	EV	
F4N6AQ_AL	165.6	-0.70		10.83		173.5	-0.47	7.72		4	AL	
G9QVRM_AL	252.0	1.97	*	28.80		250.7	2.59	*	2.22	L	3	AL
JGUPYK	167.4	-0.64		11.71		171.4	-0.56	10.60		4	LA	
JKGA4N	148.8	-1.22		16.93		147.5	-1.50	5.20		4	LS	
KBMLLR	0.3	-5.81	X	0.02	L	0.3	-7.35	X	0.01	L	3	LA
KBMLLR_AL	199.4	0.34		19.76		182.7	-0.11	14.54		3	AL	
LB33GK_AL	156.5	-0.98		10.77		158.6	-1.06	5.25		4	AL	
LXXEFW	175.2	-0.40		18.96		177.8	-0.30	4.98		4	EV	
MANUTH	254.9	2.06	*	30.99		241.4	2.22	*	9.16		4	XX
N3L8EM	172.2	-0.50		23.50		207.3	0.87	56.86	H	4	LA	
P28ZQK_AL	175.4	-0.40		19.65		161.9	-0.93	11.32		4	AL	
R9G98C	191.3	0.09		19.04		187.3	0.07	2.69	L	4	EV	
TWGZ2E	211.8	0.73		39.61	H	187.2	0.07	17.45		4	EV	
U32F6C_AL	126.9	-1.90		21.11		132.3	-2.11	*	6.07		4	AL
UNXE6F	174.6	-0.42		25.12		166.3	-0.76	7.82		3	XX	
UNXE6F_AL	169.4	-0.58		15.71		167.2	-0.72	1.97	L	3	AL	
YGJNJJ_AL	246.3	1.80		36.64		177.1	-0.33	46.75	H	4	AL	
Z7JNTD	182.9	-0.16		25.75		182.9	-0.10	0.00		1	LA	
ZTB6X4	165.5	-0.70		21.02		156.6	-1.15	6.71		4	LS	
ZTB6X4_AL	209.2	0.65		33.17		195.5	0.40	12.21		4	AL	



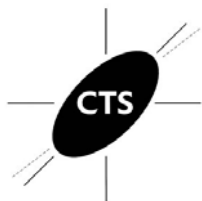
Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42L3
TAPPI Official Test Method T575

Report #670
July 2025

Consensus (All Labs) Results			
Month Mean	188.21	Grand Mean	185.43
Avg SD	23.09	Avg SD Months	22.89
SD btwn Labs	32.34	SD btwn Labs	25.20
Labs Incl	31	Labs Incl	31

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	EV	Emveco Microgage Model 210-R
LA	L&W Autoline (228 Enrollment)	LS	L&W 263
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 229
Roughness - Sheffield Method, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T538

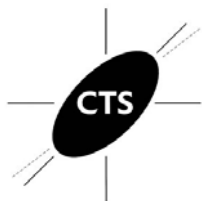
Report #670
July 2025

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
84D7NB	394.9	0.49	11.15	H	391.9	0.38	3.25	4	XX
BXRGFA_AL	400.4	0.84	4.97		397.7	0.76	2.99	4	AL
G9QVRM_AL	381.9	-0.34	2.23	L	384.0	-0.14	2.40	3	XX
GA9M3T	397.9	0.68	5.22		396.1	0.65	2.82	4	XX
HBDW8U_AL	378.3	-0.57	5.54		388.4	0.15	8.79	H 3	AK
JZAYZL_AL	400.2	0.83	4.85		395.6	0.62	6.97	4	AL
KBMLLR_AL	379.3	-0.50	6.60		379.2	-0.45	1.90	3	AL
M9TCRG_AL	394.5	0.46	10.62	H	391.4	0.35	3.01	4	AL
P28ZQK_AL	374.0	-0.84	8.82		374.1	-0.78	2.91	4	AL
Q9ZRCJ	389.7	0.16	6.91		387.4	0.08	3.88	4	PP
U7H64F	349.8	-2.38 *	3.67		348.4	-2.46 *	3.26	4	TS
UNXE6F_AL	390.4	0.20	6.19		388.0	0.12	5.14	3	AL
XDAGR8_AL	394.6	0.47	4.12		392.0	0.39	2.28	4	XX
YGJNJJ_AL	368.4	-1.20	2.76	L	363.9	-1.45	3.03	4	AL
ZTB6X4_AL	414.0	1.71	5.42		413.4	1.78	4.76	4	AL

Consensus (All Labs) Results			
Month Mean	387.22	Grand Mean	386.10
Avg SD	6.44	Avg SD Months	4.24
SD btwn Labs	15.71	SD btwn Labs	15.32
Labs Incl	15	Labs Incl	15

Key to Instrument Codes Reported by Participants

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



Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42L

TAPPI Official Test Method T569

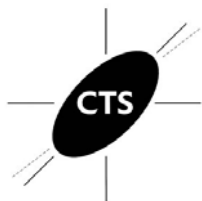
Report #670

July 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2BCAZ7	170.3	1.15	7.67	169.8	1.08	3.63	4	HZ
3UH484	154.6	0.23	4.62	161.8	0.60	7.47	4	HY
6YLMH2	121.4	-1.72	7.96	117.8	-2.00 *	6.58	3	TM
7GKU2E	0.1	-8.83 X	0.00 L	0.1	-8.97 X	0.00	1	XX
9H4ZKE	152.2	0.09	4.87	149.3	-0.14	4.40	4	TM
EXZTL6	147.1	-0.21	2.44	146.4	-0.30	0.89	2	TM
F2X47N	148.0	-0.16	2.45	146.8	-0.28	4.39	4	TM
GA9M3T	185.9	2.07 *	12.38	181.2	1.76	5.32	3	HY
JGUPYK	166.8	0.95	5.36	176.8	1.50	7.15	4	HY
JZAYZL	146.6	-0.24	4.04	162.2	0.63	13.11	4	LZ
LXXEFW	122.0	-1.68	7.52	128.5	-1.37	9.93	4	TM
M9TCRG	170.4	1.16	9.14	151.9	0.02	12.94	4	TM
NQQYTY	158.0	0.43	6.48	158.0	0.38	0.00	1	XX
Q9ZRCJ	162.0	0.67	7.97	166.9	0.91	5.50	4	HY
TWGZ2E	149.4	-0.07	8.47	146.5	-0.30	2.67	4	TM
U32F6C	145.8	-0.28	14.86	149.6	-0.12	9.74	4	TM
UNXE6F	139.8	-0.64	4.21	143.5	-0.48	3.30	3	TM
UUQDJB	148.2	-0.14	11.73	147.9	-0.22	10.03	4	TM
V4Q4ZD	158.8	0.48	6.18	155.7	0.25	2.62	4	HZ
XDAGR8	164.2	0.80	8.64	168.3	0.99	4.93	4	HY
YGJNJJ	124.0	-1.56	5.87	126.4	-1.49	2.55	4	TM
ZTB6X4	128.2	-1.32	12.61	127.2	-1.44	2.68	4	TM
Consensus (All Labs) Results								
Month Mean			150.65	Grand Mean			151.54	
Avg SD			8.10	Avg SD Months			6.92	
SD btwn Labs			17.04	SD btwn Labs			16.89	
Labs Incl			21	Labs Incl			21	

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	145.40	16.28	5.25	14
Modified Scott Bond Mechanics	167.43	16.18	16.78	4



Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42L

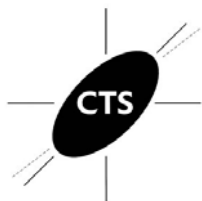
TAPPI Official Test Method T569

Report #670

July 2025

Key to Instrument Codes Reported by Participants

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



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

Report #670
July 2025

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
2BCAZ7	31.0	1.04	4.36	29.1	0.57	2.63	4
32HLG9	29.8	0.66	2.25	28.3	0.31	1.27	4
3UH484	24.0	-1.16	0.94	26.6	-0.28	1.86	4
6EXZZY	28.6	0.29	4.98	27.4	-0.03	2.78	4
6YLMH2	30.6	0.91	1.52	26.1	-0.46	3.97	3
7GKU2E	24.4	-1.03	2.95	26.3	-0.39	4.24	4
84D7NB	24.6	-0.96	5.02	29.8	0.81	4.27	4
BXRGFA	30.9	1.01	1.64	30.6	1.10	0.30	L 4
D3FBEZ	23.0	-1.46	1.22	23.0	-1.55	0.00	1
F2X47N	27.6	-0.03	1.14	24.9	-0.91	3.48	4
GA9M3T	28.1	0.12	1.26	26.7	-0.25	2.94	4
HTDCJ3	27.8	0.04	1.48	32.6	1.79	5.43	4
JGUPYK	27.0	-0.21	2.35	28.1	0.23	1.94	4
JKGA4N	21.2	-2.03 *	2.59	22.0	-1.92 *	1.39	4
JZAYZL	20.5	-2.25 *	1.37	22.1	-1.88	2.61	4
LXXEFW	31.6	1.22	2.70	30.3	1.00	1.70	4
MANUTH	28.0	0.10	3.69	28.8	0.48	2.33	4
MY7DYP	25.4	-0.71	1.14	24.0	-1.20	2.50	4
NMPHAX	26.7	-0.31	1.10	26.2	-0.44	1.62	4
P28ZQK	26.7	-0.30	2.13	27.9	0.17	3.48	4
Q9ZRCJ	28.6	0.29	3.29	28.1	0.22	1.37	4
R9G98C	26.8	-0.28	3.75	28.2	0.26	1.93	4
RQ2Z7C	16.4	-3.53 X	0.89	22.7	-1.68	4.88	4
TWGZ2E	31.4	1.16	2.61	31.9	1.55	2.23	4
U32F6C	31.5	1.19	2.02	30.5	1.07	2.63	4
UNXE6F	27.8	0.04	2.28	26.7	-0.25	0.92	3
XDAGR8	27.8	0.04	4.44	26.6	-0.31	1.45	4
YGJNJJ	33.0	1.67	2.83	30.6	1.10	1.77	4
ZTB6X4	30.8	0.97	2.28	29.9	0.86	0.96	4

Consensus (All Labs) Results

Month Mean	27.68	Grand Mean	27.43
Avg SD	2.75	Avg SD Months	2.75
SD btwn Labs	3.20	SD btwn Labs	2.85
Labs Incl	28	Labs Incl	29



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

Report #670
July 2025

Key to Instrument Codes Reported by Participants

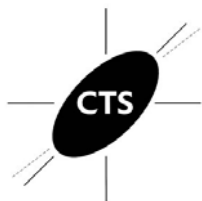
ZZ Instruments No Longer Tracked



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

Report #670
July 2025

WebCode	Monthly Results			Cumulative Results					Inst
	Mean	CPV	SD	Mean	CPV	SD	Months	Months	
2BCAZ7	32.6	0.09	1.98	32.9	0.27	0.37	4		LP
3UH484	30.1	-1.39	1.60	32.0	-0.37	1.55	4		LP
6EXZZY_AL	30.1	-1.34	1.42	31.3	-0.89	0.91	4		AL
6YLMH2_AL	34.4	1.11	2.31	34.3	1.27	1.12	4		AL
7FPBYD_AL	33.3	0.46	1.53	33.7	0.84	0.51	4		AL
7GKU2E_AL	36.5	2.29 *	2.62	44.2	8.39 X	16.49 H	4		AL
84D7NB	34.6	1.22	3.82	34.2	1.22	0.68	4		GA
8BRGQV	32.3	-0.08	1.44	32.5	-0.01	0.56	4		LA
9Z3A7W	32.1	-0.23	1.33	32.1	-0.34	0.78	4		LP
BA74DU	32.2	-0.18	4.46 H	32.5	-0.02	0.80	4		LP
BXRGFA_AL	31.6	-0.50	2.46	39.8	5.21 X	13.48 H	4		AL
CEEP2R	32.5	-0.02	1.14 L	31.7	-0.63	1.29	4		LA
D3FBEZ	30.8	-0.98	1.16 L	31.0	-1.07	0.64	4		LA
F2X47N	34.5	1.14	2.47	34.9	1.70	1.87	4		GA
G9QVRM_AL	34.0	0.84	3.19	33.8	0.90	0.35	3		XX
GA9M3T	34.1	0.93	6.73 H	31.9	-0.44	2.40	4		TP
HBDW8U_AL	32.5	0.02	2.51	33.5	0.66	0.88	3		AK
JGUPYK	32.6	0.06	3.57	32.8	0.21	0.32	4		LP
JKGA4N	30.5	-1.12	2.92	29.3	-2.29 *	1.35	4		TD
JZAYZL_AL	31.4	-0.62	1.48	33.5	0.69	1.68	4		AL
KBMLLR_AL	28.7	-2.14 *	2.55	30.9	-1.19	1.91	3		XX
LB33GK_AL	33.4	0.52	2.99	31.7	-0.60	1.40	4		AL
LDBEYL	32.8	0.18	3.01	32.5	-0.06	0.49	2		XX
LXXEFW	32.0	-0.28	2.21	32.2	-0.22	0.98	4		LP
M9TCRG_AL	31.0	-0.88	1.70	30.8	-1.28	1.07	4		AL
MANUTH	29.6	-1.64	1.52	30.6	-1.35	0.71	4		LP
MLHD8M	33.3	0.46	3.02	34.2	1.20	1.27	2		GG
MY7DYP	32.7	0.13	3.10	33.7	0.87	1.42	4		XX
N3L8EM	31.1	-0.77	1.93	31.1	-1.00	0.55	4		LA
NMPHAX_AL	32.7	0.12	1.70	31.4	-0.79	1.63	4		XX
P28ZQK_AL	29.7	-1.60	1.38	30.3	-1.60	0.50	4		AL
Q9ZRCJ	34.1	0.92	4.84 H	34.4	1.36	0.91	4		TP
RQ2Z7C	32.6	0.04	1.53	25.0	-5.40 X	13.82 H	4		LP
TWGZ2E_AL	34.0	0.88	3.83	33.2	0.51	0.98	4		AL
U32F6C_AL	34.9	1.39	1.18 L	32.7	0.11	2.17	4		AL
UNXE6F	33.0	0.30	2.82	32.2	-0.21	1.22	3		LP
UNXE6F_AL	35.6	1.78	3.41	35.7	2.31 *	0.26	3		AL
XDAGR8	32.8	0.16	4.38	31.9	-0.42	0.88	4		TP
XDAGR8_AL	31.2	-0.76	2.30	32.4	-0.08	1.75	4		XX



Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42L

TAPPI Official Test Method T460

Report #670

July 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
XP4WG9	29.5	-1.71	1.78	31.0	-1.10	2.12	2	XX
YGJNJJ_AL	31.4	-0.63	2.27	32.6	0.03	0.81	4	AL
Z7JNTD	34.3	1.03	1.94	34.3	1.27	0.00	1	LA
ZTB6X4_AL	33.9	0.78	2.53	33.2	0.50	0.51	4	AL
Consensus (All Labs) Results								
Month Mean			32.49	Grand Mean		32.53		
Avg SD			2.76	Avg SD Months		1.20		
SD btwn Labs			1.75	SD btwn Labs		1.39		
Labs Incl			43	Labs Incl		40		

Key to Instrument Codes Reported by Participants

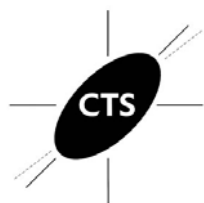
AK	L & W Autoline 300	AL	L & W Autoline 400
GA	Gurley Precision #4340 Automatic Densometer	GG	Gurley Precision #4320 Densometer
LA	L&W Autoline (237 Enrollment)	LP	L&W Air Permeance Tester SE 166
TD	TMI Gurley Densometer	TP	Technidyne Profile/ plus Roughness & Porosity
XX	Instrument make/model not specified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



Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T809

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2BCAZ7	57.1	57.0	57.9	55.9	57.0	-0.42	4.7	0.8	57.4	-0.13	4.8	1.5	16	LZ
2LTW8L	58.7	59.0 H	58.1	58.8	58.6	0.20	4.9	0.4	59.0	0.40	4.0	1.2	12	LD
2VY9GH	59.7	56.6	54.7 H	56.6	56.9	-0.45	5.1	2.0	57.8	0.01	4.3	1.9	11	LD
32HLG9	58.1	57.6	56.5	56.5	57.2	-0.35	3.4	0.8	57.9	0.04	3.8	1.1	16	TX
3884VK	61.0	60.3	60.6	59.1	60.3	0.80	4.6	0.8	61.1	1.09	4.2	3.1	16	LD
3UH484	No DATA	No DATA	No DATA	59.8	59.8	0.62	4.0	0.0	51.5	-2.11 *	3.0	13.9 H	5	LD
677QP4	57.3 L	57.5 L	57.4 L	57.4 L	57.4	-0.27	0.5	0.1 L	58.4	0.18	0.6	1.6	16	TU
6EXZZY	57.4	55.7 H	54.0 H	57.4	56.1	-0.73	7.2	1.6	56.4	-0.47	4.8	2.0	16	LZ
776CH2	62.2	61.2	61.2	63.1	61.9	1.42	2.4	0.9	62.5	1.56	2.2	0.9	16	TB
84D7NB	58.9 H	59.4	60.9	62.3	60.4	0.84	4.8	1.5	58.5	0.22	4.1	2.3	16	LZ
88ARFE	62.8	59.7	65.7 *	65.9 *	63.5	2.02 *	4.2	2.9	60.3	0.84	5.1	4.0	16	LD
8BRGQV	64.8 *	61.4	61.4	66.3 *	63.5	1.99 *	4.6	2.5	61.1	1.09	4.5	2.6	16	TU
9H4ZKE	58.7	61.0	62.3	58.8	60.2	0.78	3.5	1.8	62.3	1.49	3.1	2.6	16	LC
9Z3A7W	58.8	61.8	57.8	61.3	59.9	0.67	3.5	2.0	58.8	0.33	4.0	1.7	16	LD
BA74DU	59.7 L	56.6 L	54.5	59.2	57.5	-0.23	2.6	2.4	57.9	0.04	2.9	1.7	16	LD
BZDT4Y	45.1 X	39.5 X	44.5 X	41.4 X	42.6	-5.76 X	3.8	2.6	46.4	-3.83 X	5.2	3.8	12	TH
D3FBEZ	49.7 *	51.2 *	48.5 *	49.9 *	49.8	-3.08 X	4.9	1.1	49.8	-2.68 *	4.9	1.1	4	MB
E7BU86	55.7	54.9	54.9	54.8	55.1	-1.14	3.4	0.4	53.8	-1.34	3.5	1.3	12	LD
F2X47N	53.7	55.3	56.7	56.7	55.6	-0.94	3.9	1.4	56.3	-0.50	3.3	1.3	16	LD
GA9M3T	56.4	57.5	59.7	54.9 H	57.1	-0.37	9.0	2.0	58.4	0.18	5.6	2.5	16	LC
GK8KQR	59.5 L	60.1 L	62.9 L	59.9 L	60.6	0.92	0.7	1.6	60.9	1.02	0.9	1.4	16	XX
JGUPYK	59.3	57.5	57.7	59.0	58.4	0.09	3.7	0.9	59.0	0.41	4.2	1.5	16	XX
JQ2WP2	61.0	58.2	57.1	56.5	58.2	0.04	4.7	2.0	57.2	-0.22	3.6	2.2	16	LD
JZAYZL	53.4	55.2	55.0	55.4 L	54.7	-1.25	3.4	0.9	54.2	-1.20	3.4	1.2	16	LD
KBMLLR	55.2	56.5	54.5	55.7	55.5	-0.98	4.1	0.9	56.0	-0.61	3.4	1.3	12	LD
KTMZXY	55.1	56.1	55.2	54.9	55.3	-1.04	2.6	0.5	56.2	-0.54	3.1	1.1	16	EM
LDBEYL	51.9 H	53.3	53.6	54.1	53.2	-1.82	6.1	1.0	53.2	-1.56	3.9	1.9	16	LD
MANUTH	57.2	57.8	61.3	60.7	59.2	0.42	4.1	2.0	59.4	0.54	3.2	1.4	16	LD
MY7DYP	61.4	60.4	59.5	59.4	60.2	0.76	3.7	0.9	59.7	0.64	4.0	2.1	16	LD
NKKKMN	57.8	54.5	54.1 L	55.6 L	55.5	-0.97	1.9	1.7	55.9	-0.63	2.2	2.3	16	XX
P98KTF	58.6	62.1	58.8	60.1	59.9	0.67	4.0	1.6	60.7	0.97	4.3	2.2	16	LD
Q9ZRCJ	53.8	53.1	54.1 L	No DATA	53.7	-1.66	3.0	0.5	53.7	-1.36	3.2	0.6 L	15	LD
QJ4DQT	59.0	60.3	57.4	60.1	59.2	0.41	4.1	1.3	58.7	0.30	4.1	1.8	16	EN
R9G98C	59.0	57.0	58.1	60.6	58.7	0.21	4.1	1.5	57.9	0.03	4.0	1.6	16	EN
RQ2Z7C	54.6	55.0	58.9	60.5	57.3	-0.32	3.6	2.9	58.3	0.15	3.7	2.3	16	LD



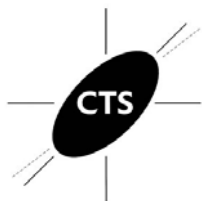
Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T809

Report #670
July 2025

Consensus (All Labs) Results															
Wk Mean	58.09	57.73	57.57	58.31	Month Mean	58.11			Grand Mean	57.82					
Avg SDr	3.93	3.72	3.78	4.54	Avg SD	3.98			Avg SD	3.63					
SD btwn Labs	3.40	2.81	3.38	3.29	SD btwn Labs	2.69			SD btwn Labs	2.98					
Labs Incd	44	44	44	44	SD btwn Wks	1.58			SD btwn Wks	2.76					
Labs Excd	1	1	1	1	Labs Incd	44			Labs Incd	45					
Labs not Rcvd	1	1	1	1											

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TB	TMI Monitor/Compression Tester, 17-70	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	TX	TMI Crush Tester (model not specified)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program

Analysis 250

Report #670

July 2025

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

TAPPI Official Test Method T843

Consensus (All Labs) Results															
Wk Mean	66.28	65.90	66.11	66.14	Month Mean	66.15			Grand Mean	67.18					
Avg SDr	3.30	3.72	3.63	3.44	Avg SD	3.53			Avg SD	3.37					
SD btwn Labs	3.88	4.45	4.41	3.79	SD btwn Labs	3.82			SD btwn Labs	2.21					
Labs Incl	21	21	21	20	SD btwn Wks	1.83			SD btwn Wks	1.77					
Labs Excl	0	0	0	0	Labs Incl	21			Labs Incl	19					
Labs not Rcvd	0	0	0	1											

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T822

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2VY9GH	38.6	40.8	40.3	39.5	39.8	-1.27	2.8	1.0	43.2	0.82	3.2	3.1	11	LD
3884VK	44.3	40.7	44.0	34.4 XH	40.9	-0.61	4.9	4.6 H	44.2	1.52	4.1	4.4 H	16	LZ
677QP4	41.1 L	41.2 L	41.0 L	41.0 L	41.0	-0.49	0.6	0.1 L	42.3	0.18	0.6	1.0	16	TU
776CH2	42.1	42.8	43.8	44.0	43.2	0.82	2.1	0.9	55.8	9.98 X	2.3	25.6 H	16	XX
84D7NB	42.0	41.1	42.3	43.5	42.2	0.24	3.9	1.0	40.9	-0.85	3.3	1.5	16	LD
88ARFE	42.4	42.8 H	42.4	44.1	42.9	0.67	4.5	0.8	43.3	0.92	4.1	1.5	16	LD
9Z3A7W	37.0 *	41.1	37.7	42.5	39.6	-1.41	2.9	2.7	39.5	-1.90 *	2.9	1.6	16	LD
A44FK3	40.6	41.7	41.5	40.5	41.1	-0.47	3.9	0.6	39.6	-1.81	4.4	1.7	16	XX
BA74DU	42.4	41.2 L	41.5 L	42.3	41.8	0.00	1.9	0.6	41.8	-0.19	2.4	1.3	16	LD
CCAYWX	47.2 *	44.4	46.0 *	41.6	44.8	1.83	3.0	2.4	41.7	-0.27	3.3	2.4	16	TH
D3FBEZ	44.7	43.6	35.7 *H	41.7 H	41.4	-0.27	4.9	4.0 H	41.4	-0.48	4.9	4.0	4	MB
GA9M3T	43.9	43.3	43.1	41.5 H	42.9	0.69	3.5	1.0	42.4	0.23	3.3	1.6	16	LC
HBDW8U	43.3	39.4	40.7	42.6	41.5	-0.21	2.6	1.8	42.5	0.30	2.8	1.7	12	LD
JGUPYK	42.2	41.1	41.4	42.3	41.7	-0.06	3.2	0.6	41.3	-0.53	3.3	1.4	16	XX
JQ2WP2	39.1	40.7	36.7 *	39.5	39.0	-1.77	3.3	1.7	40.3	-1.32	3.1	1.9	16	LD
JZAYZL	46.8 H	43.9	41.1	42.5	43.6	1.09	3.3	2.4	43.2	0.79	3.5	1.8	16	LD
KBMLLR	38.8 H	37.4 *	37.4	40.0	38.4	-2.14 *	4.1	1.3	42.2	0.08	3.7	3.3	12	LD
LDBEYL	43.3	45.5 *	43.8	42.9	43.9	1.30	2.2	1.1	44.6	1.84	2.3	1.7	16	LD
NKKKMN	43.0	42.6	40.3	44.6	42.6	0.50	1.7	1.8	43.5	1.05	1.3	1.1	16	MZ
Q9ZRCJ	42.3	43.6	42.8	No DATA	42.9	0.66	3.4	0.7	42.7	0.45	3.4	1.4	14	LD
RQ2Z7C	43.2	41.9	41.5	40.8	41.9	0.01	2.2	1.0	40.5	-1.17	3.3	1.7	16	LD
TG8BNE	42.1	42.4	42.8	41.6	42.2	0.24	2.4	0.5	54.7	9.18 X	1.9	24.6 H	16	XX
U7MRUN	37.2 *	39.7	40.3	42.5	39.9	-1.20	2.7	2.2	40.6	-1.09	3.0	3.0	16	LZ
V4Q4ZD	44.4	44.6	43.8	44.9	44.4	1.62	2.6	0.5	43.3	0.92	3.2	1.7	16	LD
VDFJFN	43.3 L	43.3 L	43.3 L	43.3 L	43.3	0.90	0.7	0.0 L	43.5	1.04	0.6	0.2 L	16	LD
XAVLCB	41.5	41.9	41.4	41.1	41.5	-0.23	2.7	0.3	41.6	-0.36	2.0	0.3 L	16	MB
XDAGR8	40.4	41.4	41.9	41.0	41.2	-0.42	2.8	0.6	41.8	-0.20	2.8	1.0	16	LD
Consensus (All Labs) Results														
Wk Mean	42.11	42.00	41.41	42.06	Month Mean		41.83		Grand Mean		42.07			
Avg SDr	2.82	3.18	3.44	2.66	Avg SD		3.09		Avg SD		3.16			
SD btwn Labs	2.51	1.76	2.37	1.49	SD btwn Labs		1.60		SD btwn Labs		1.37			
Labs Incl	27	27	27	25	SD btwn Wks		1.73		SD btwn Wks		2.09			
Labs Excl	0	0	0	1	Labs Incl		27		Labs Incl		25			
Labs not Rcvd	0	0	0	1										



Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T822

Report #670
July 2025

Key to Instrument Codes Reported by Participants

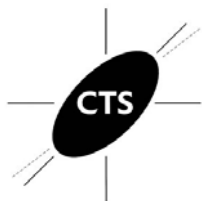
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
MZ	Messmer Buchel (model not specified)	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T826

Report #670
July 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results						Inst			
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks					
32HLG9	13.9	13.1	12.6	12.5	*	13.0	-0.98	1.1	0.6	13.2	-1.06	1.1	0.5	16	TX			
3884VK	15.9	*H	12.2	No DATA	No DATA	14.1	0.71	1.6	2.6	12.9	-1.50	1.7	3.1	H	14	LZ		
3UH484	No DATA	No DATA	No DATA	13.1		13.1	-0.95	0.9	0.0	13.3	-0.80	0.9	0.3	4	LH			
677QP4	14.0	13.9	13.8	13.9		13.9	0.45	1.0	0.1	L	13.7	0.06	1.1	0.2	16	XX		
84D7NB	13.2	13.0	13.4	13.1		13.2	-0.78	0.9	0.2		13.2	-1.01	0.9	0.3	16	LB		
8BRGQV	13.9	13.8	14.0	14.6		14.1	0.74	1.3	0.4		14.3	1.40	1.2	0.5	16	LA		
9H4ZKE	12.7	13.9	13.6	14.0		13.6	-0.12	0.9	0.6		13.5	-0.39	1.0	0.4	16	LA		
BWWYE9	14.3	13.2	13.9	14.7		14.0	0.65	1.1	0.6		14.0	0.64	1.2	0.5	16	LU		
BZDT4Y	24.1	X	21.2	XH	24.0	XH	23.7	X			16.5	5.91	X	1.2	5.1	H	12	TS
D3FBEZ	14.8	13.5	13.4	13.5		13.8	0.27	1.1	0.7		14.0	0.80	1.1	0.6	16	LA		
GA9M3T	13.2	13.6	13.5	13.5		13.5	-0.28	1.0	0.1		13.5	-0.38	1.1	0.2	16	LU		
GK8KQR	13.4	L	11.7	*L	12.7	L	11.3	XL			12.1	-3.33	X	0.8	3.0	H	16	XX
HBDW8U	13.5	14.9	*	14.7		14.5	1.38	1.4	0.6		14.0	0.69	1.2	0.6	16	LH		
HNHHLZ	14.5	12.6	H	14.2		13.7	0.10	1.3	0.8		13.4	-0.53	1.1	0.7	8	XX		
JQ2WP2	12.5	12.8	13.0	13.0		12.8	-1.30	1.0	0.2		12.8	-1.72	1.0	0.2	4	LH		
JZAYZL	13.7	L	14.2	13.8	13.8	L					13.8	0.37	1.0	0.4	16	LA		
KBMLLR	12.4	12.5	12.5	13.5		12.7	-1.49	1.0	0.5		13.3	-0.69	0.9	0.7	12	LZ		
KTMZXY	14.5	14.5	14.3	14.0		14.3	1.15	1.1	0.2		14.2	1.09	1.1	0.3	16	LH		
MY7DYP	13.6	L	13.7	L	14.0	L	14.0	L			14.0	0.76	0.0	0.6	16	LH		
N3L8EM	12.3	13.2	13.4	13.0		13.0	-1.05	1.2	0.5		13.1	-1.16	1.2	0.6	16	LA		
NKKKMN	12.7	L	13.5	L	13.9	L	13.4	L			13.5	-0.26	0.5	0.5	16	LZ		
Q9ZRCJ	13.6	L	13.3	13.3	No DATA		13.4	-0.39	0.9	0.2	13.3	-0.70	1.0	0.4	15	LB		
RQ2Z7C	13.8	13.2	12.7	13.6		13.3	-0.53	1.1	0.5		13.6	-0.04	1.2	0.5	16	XX		
U7MRUN	14.5	H	13.5	13.5	14.0	L					13.6	-0.06	1.5	0.7	12	XX		
UNXE6F	12.7	13.1	H	12.8	12.9	H					13.0	-1.36	1.4	0.2	12	LB		
V4Q4ZD	15.3	14.1	14.0	14.9		14.6	1.59	1.0	0.6		14.1	0.86	1.6	0.5	16	XX		
YGJNJJ	14.6	14.4	14.3	14.1		14.4	1.20	1.0	0.2		14.3	1.28	1.1	0.5	16	LA		
Z7JNTD	15.4	14.0	15.4	*	14.3		14.8	1.87	1.2	0.7	14.8	2.31	*	1.2	0.7	4	LA	
ZPDLV6	13.7	13.2	14.2	13.8	L		13.7	0.10	0.9	0.4	13.9	0.47	1.1	0.6	12	LA		
ZTB6X4	14.0	13.5	13.8	14.3		13.9	0.44	1.1	0.3		14.1	0.93	1.1	0.4	16	LA		



Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T826

Report #670
July 2025

					Consensus (All Labs) Results			
Wk Mean	13.81	13.43	13.64	13.75	Month Mean	13.63	Grand Mean	13.66
Avg SDr	1.25	1.10	1.04	1.10	Avg SD	1.13	Avg SD	1.15
SD btwn Labs	0.93	0.71	0.67	0.62	SD btwn Labs	0.61	SD btwn Labs	0.48
Labs Incl	28	28	27	26	SD btwn Wks	0.69	SD btwn Wks	0.76
Labs Excl	1	1	1	2	Labs Incl	29	Labs Incl	28
Labs not Rcvd	1	1	2	2				

Analysis Notes

GK8KQR - Data appears to be switched between Analysis 223 and Analysis 261 for Week 1. Data switched by CTS.

Key to Instrument Codes Reported by Participants

LA	L&W Autoline	LB	L&W Model 152
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
LZ	L&W (model not specified)	TS	TMI Monitor/STFI Compression Tester, 17-33
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab

End of Report