



Paper & Paperboard Interlaboratory Testing Program

Summary Report #241S - July 2009

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The CTS Paper & Paperboard Interlaboratory Fiberboard Program

In 1969, the National Bureau of Standards (now designated the National Institute for Standards and Technology) and the Technical Association of the Pulp and Paper Industry (TAPPI) developed an interlaboratory program for paper and paperboard testing. Since 1971, Collaborative Testing Services has operated the Collaborative Reference Program for Paper and Paperboard. With hundreds of organizations from around the world participating in these tests, this program has become one of the largest of its kind. The program allows laboratories to compare the performance of their testing with that of other participating laboratories, and provides a realistic picture of the state of paper testing.

About CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of industrial sectors: rubber, plastics, fasteners and metals, CKPG, 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 assurance objectives.

If there are any questions on the report or testing program, please contact:

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Sterling, Virginia 20166 USA
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FAX #: +1-571-434-1937
paper@cts-interlab.com

(Toll-free fax within the U.S.: 1-866-fax-2cts)
Office Hours: 8:00 a.m. - 4:30 p.m. ET

Key for Web Summary Reports (Page 1 of 2)

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Paper Report published on the CTS web site. The WebCode for each analysis can be found in the Performance Analysis Report mailed to each participant. In addition, the WebCodes can be found on the data sheets.
Lab Mean	The average of the values obtained for each sample by the participant.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Difference from Grand Mean	The difference of the LAB MEAN from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section), if instruments are tracked.
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

DATA FLAG	STATISTICALLY INCLUDED/EXCLUDED	ACTION REQUIRED
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample.

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained on the previous page.

Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

Instrument Manufacturer Contacts

If your results have been flagged with an "X" and you suspect that the problem is with your instrument (and not your testing procedure), CTS urges you to contact the appropriate instrument manufacturer. CTS has asked manufacturers to supply a contact person who is familiar with the Paper, Paperboard & Corrugated Fiberboard Interlaboratory Program. The listed service contact should be able to work with you on evaluating your results and determining possible causes of the problem.

Technidyne Corp., Hagerty Div.

George Hagerty
287 Dix Ave. P.O. Box 4741
Queensbury, NY 12804
Phone: (518) 793-2834
FAX #: (518) 792-1796

Technidyne Corporation

Jeff Hobbs / Mike Lankins
100 Quality Avenue
New Albany, IN 47150-2272 USA
Phone: (812) 948-2884
FAX #: (812) 945-6847

Thwing Albert Instrument Co.

Raymond McCart, Service Contact
David Zarrilli, Sales Contact
10960 Dutton Road
Philadelphia, PA 19154
Phone: (215) 637-0100
FAX #: (215) 632-8370

Testing Machines Inc.

Michael Foran, Technical Support Engineer
2910 Expressway Drive South
Islandia, NY 11722
Phone: (631) 439-5400
FAX #: (631) 439-5420

Huygen Corporation

Richard Wade
P.O. Box 316
Waconda, IL 60084
Phone: (815) 455-2200
FAX #: (815) 455-2300

Gurley Precision Instruments

Martin Gordinier, Product Manager
P.O. Box 88
Troy, NY 12181-0088
Phone: (800) 759-1844
FAX #: (518) 274-0336

Lorentzen & Wettre USA Inc.

Bill Crai, Technical Manager
1055 Windward Ridge Pkwy
Suite 160
Alpharetta, GA 30005
Phone: (770) 442-8015
FAX #: (770) 442-6792

Valmet Inc.

Eeva Nettamo, Product Mgr Paper Testing
3100 Medlock Bridge Road - Suite 260
Norcross, GA 30071
Phone: (404) 448-0849
FAX #: (404) 242-8386

Custom Scientific Instruments

DEK-TRON Scientific
Segundo Vargas, Chief Design Engineer
244 East Third Street

Emmerson Apparatus

170 Anderson Street
Portland, ME 04101
Phone: (207) 774-5254

Plainfield, NJ 07060
Phone: (908) 668-1777
FAX #: (908) 668-4794

FAX#: (207) 774-5304

TAPPI-CTS Interlaboratory Testing Program
Analysis 305
Bursting Strength - Printing Papers

WebCode	Data Flag	Sample SA47			Sample SA48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DMHQJ		34.11	0.38	0.21	27.22	0.81	0.46
3Q6A7J		35.69	1.96	1.10	29.12	2.71	1.54
54KL4Q		33.10	-0.63	-0.35	26.15	-0.26	-0.15
5B164G		33.84	0.11	0.06	26.88	0.47	0.26
5WQFAP		31.80	-1.93	-1.08	25.00	-1.41	-0.80
6GYDQ9		33.81	0.08	0.04	26.42	0.01	0.01
72TX5V		33.40	-0.34	-0.19	26.58	0.17	0.09
7UL5EE		36.27	2.54	1.42	29.31	2.90	1.65
7X1EY2		36.16	2.43	1.36	28.25	1.84	1.05
8WYHVE		35.72	1.99	1.12	28.07	1.66	0.94
9M21PG		32.90	-0.83	-0.47	24.05	-2.36	-1.34
AMWKW		36.01	2.28	1.28	27.06	0.65	0.37
DHXRNQ		32.20	-1.53	-0.86	27.15	0.74	0.42
DTPZ3S		30.03	-3.70	-2.07	23.96	-2.44	-1.39
EX9ELR		32.40	-1.33	-0.75	25.10	-1.31	-0.74
GBAU35		35.44	1.71	0.96	29.24	2.83	1.61
GG8821		33.70	-0.03	-0.02	26.10	-0.31	-0.18
GYZ9QY		35.56	1.83	1.02	28.48	2.07	1.18
H6S8A4		33.28	-0.45	-0.25	25.95	-0.46	-0.26
HLM1YL		35.20	1.47	0.82	27.73	1.32	0.75
HN2PZJ		34.85	1.12	0.63	26.55	0.14	0.08
JC43QE		35.10	1.37	0.77	29.10	2.69	1.53
KTD9FF		31.60	-2.13	-1.20	25.73	-0.68	-0.39
KX8F8J		34.90	1.17	0.65	26.70	0.29	0.16
L4N9C9	*	30.60	-3.13	-1.76	21.40	-5.01	-2.85
LLUAL1		31.90	-1.83	-1.03	23.54	-2.87	-1.63
LWRWM		31.79	-1.94	-1.09	23.96	-2.45	-1.39
M6RA1C		36.19	2.46	1.38	27.93	1.52	0.86
MER4KB		35.39	1.66	0.93	27.39	0.98	0.56
NW3NM2		36.01	2.28	1.28	27.15	0.74	0.42
NWY1D		34.00	0.27	0.15	26.00	-0.41	-0.23
SP5N4Q		31.00	-2.73	-1.53	24.50	-1.91	-1.09
TL1G74		33.55	-0.18	-0.10	25.75	-0.66	-0.37
V9125Q		31.70	-2.03	-1.14	25.10	-1.31	-0.74
X3SNTS		35.04	1.31	0.73	27.90	1.49	0.85
X838XX		31.05	-2.68	-1.50	23.20	-3.21	-1.82
XDMF19		31.40	-2.33	-1.31	25.15	-1.26	-0.72
XQKEU2		35.37	1.64	0.92	27.05	0.64	0.36
XRG649		35.06	1.32	0.74	27.46	1.05	0.59
Y1G9GH		34.35	0.62	0.35	27.10	0.69	0.39
Y8AS2Y		32.16	-1.58	-0.88	25.88	-0.53	-0.30
ZLGL8P		33.14	-0.59	-0.33	26.85	0.44	0.25

TAPPI-CTS Interlaboratory Testing Program
Analysis 305
Bursting Strength - Printing Papers

	Sample SA47	Summary Statistics	Sample SA48
Grand Means	33.733 psi		26.410 psi
SD Btwn Labs	1.784 psi		1.760 psi
Statistics based on 42 of 42 reporting participants			

Notes for Analysis 305

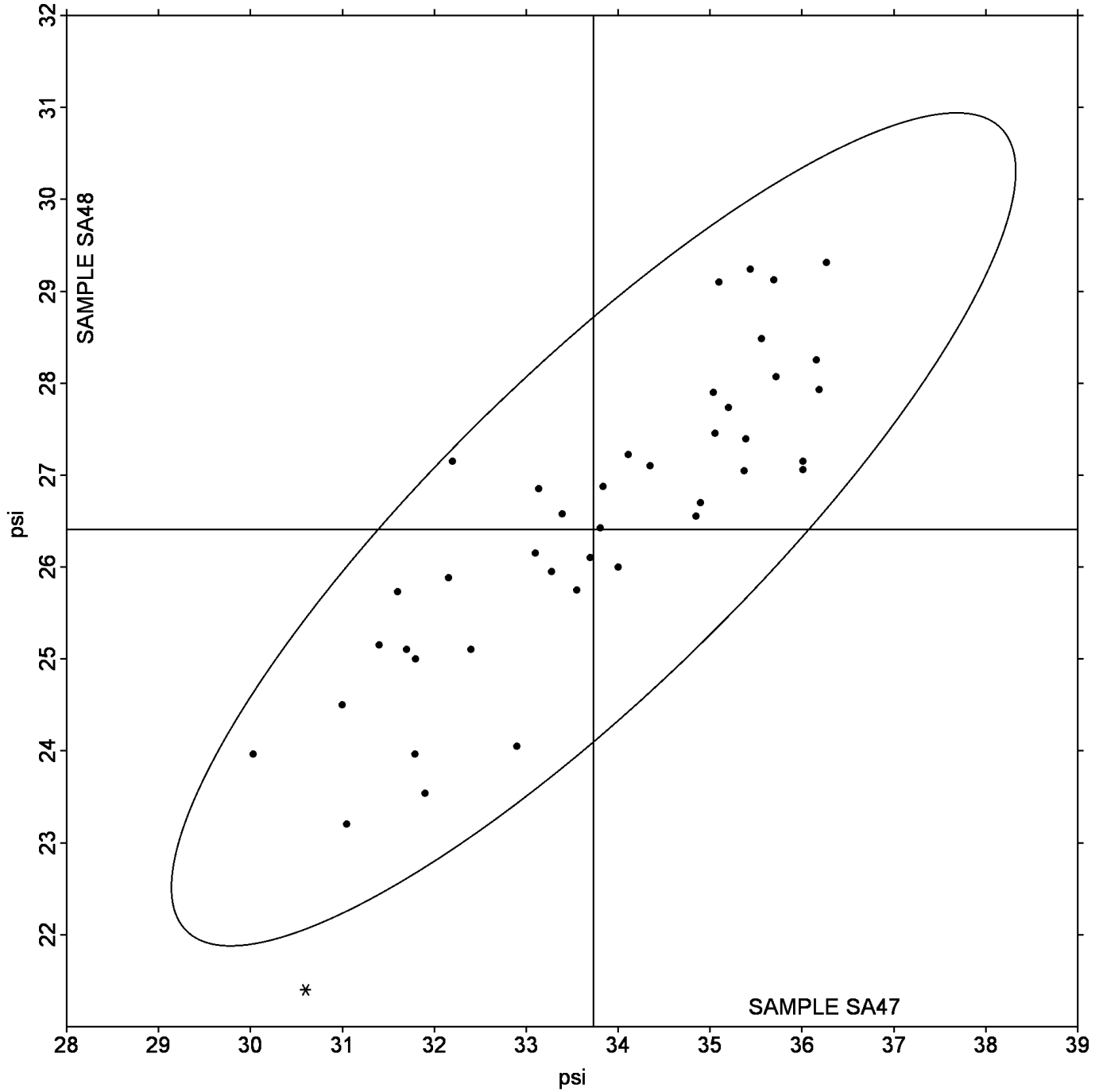
No Data Flags assigned for this analysis.

TAPPI-CTS Interlaboratory Testing Program
Analysis 305
Bursting Strength - Printing Papers

Grand Mean Sample SA47 = 33.733 psi

Grand Mean Sample SA48 = 26.410 psi

ANALYSIS 305



TAPPI-CTS Interlaboratory Testing Program
Analysis 310
Bursting Strength - Packaging Papers

WebCode	Data Flag	Sample SB47			Sample SB48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1TA5VB		82.50	-0.60	-0.15	58.87	-1.91	-0.51
63KGSWF		85.50	2.41	0.61	63.25	2.47	0.65
7484XH		82.03	-1.06	-0.27	59.18	-1.61	-0.43
77FXTM		77.60	-5.49	-1.39	56.12	-4.66	-1.23
7K2T5M	*	86.73	3.64	0.92	71.36	10.58	2.80
7Q6A51		88.07	4.97	1.26	61.39	0.61	0.16
8253TJ		78.97	-4.12	-1.04	53.38	-7.40	-1.96
8AMJTY		83.84	0.75	0.19	61.60	0.82	0.22
8UDNFR		81.66	-1.44	-0.36	58.13	-2.65	-0.70
9GQCDY		83.70	0.61	0.15	61.71	0.93	0.25
B148WB		80.77	-2.32	-0.59	59.54	-1.24	-0.33
DCLYEB		73.43	-9.66	-2.44	55.88	-4.90	-1.30
G8Z8S5		89.03	5.93	1.50	65.56	4.77	1.26
J86PQV		84.20	1.11	0.28	58.80	-1.98	-0.52
KB9B4R		83.03	-0.06	-0.02	66.30	5.51	1.46
N6SF5B		73.20	-9.89	-2.50	53.95	-6.83	-1.81
NPQ8Z5		88.60	5.51	1.39	58.80	-1.98	-0.52
PH2U1Q		83.90	0.81	0.20	63.20	2.42	0.64
QX71B7		81.56	-1.54	-0.39	62.96	2.18	0.58
RUL9Q9		83.30	0.21	0.05	58.00	-2.78	-0.74
SS8KHB		83.83	0.74	0.19	61.58	0.80	0.21
T6UE48	X	91.10	8.01	2.02	54.70	-6.08	-1.61
T74XX7		85.72	2.62	0.66	60.29	-0.49	-0.13
TPL2BZ		88.58	5.48	1.38	65.44	4.66	1.23
UEWQRJ		88.10	5.01	1.26	65.88	5.09	1.35
WML9RB		83.66	0.56	0.14	59.47	-1.32	-0.35
X9P2CK		84.93	1.84	0.46	60.03	-0.75	-0.20
XAU5TH		80.10	-2.99	-0.76	60.30	-0.48	-0.13
Y59JH4		83.69	0.59	0.15	61.08	0.29	0.08
YZT12U		78.93	-4.16	-1.05	61.57	0.79	0.21
Z8TYZ4		83.68	0.59	0.15	59.85	-0.93	-0.25

Sample SB47		Summary Statistics	Sample SB48	
Grand Means	83.095 psi		60.782 psi	
SD Btwn Labs	3.962 psi		3.778 psi	
Statistics based on 30 of 31 reporting participants				

Comments on assigned Data Flags for Test #310

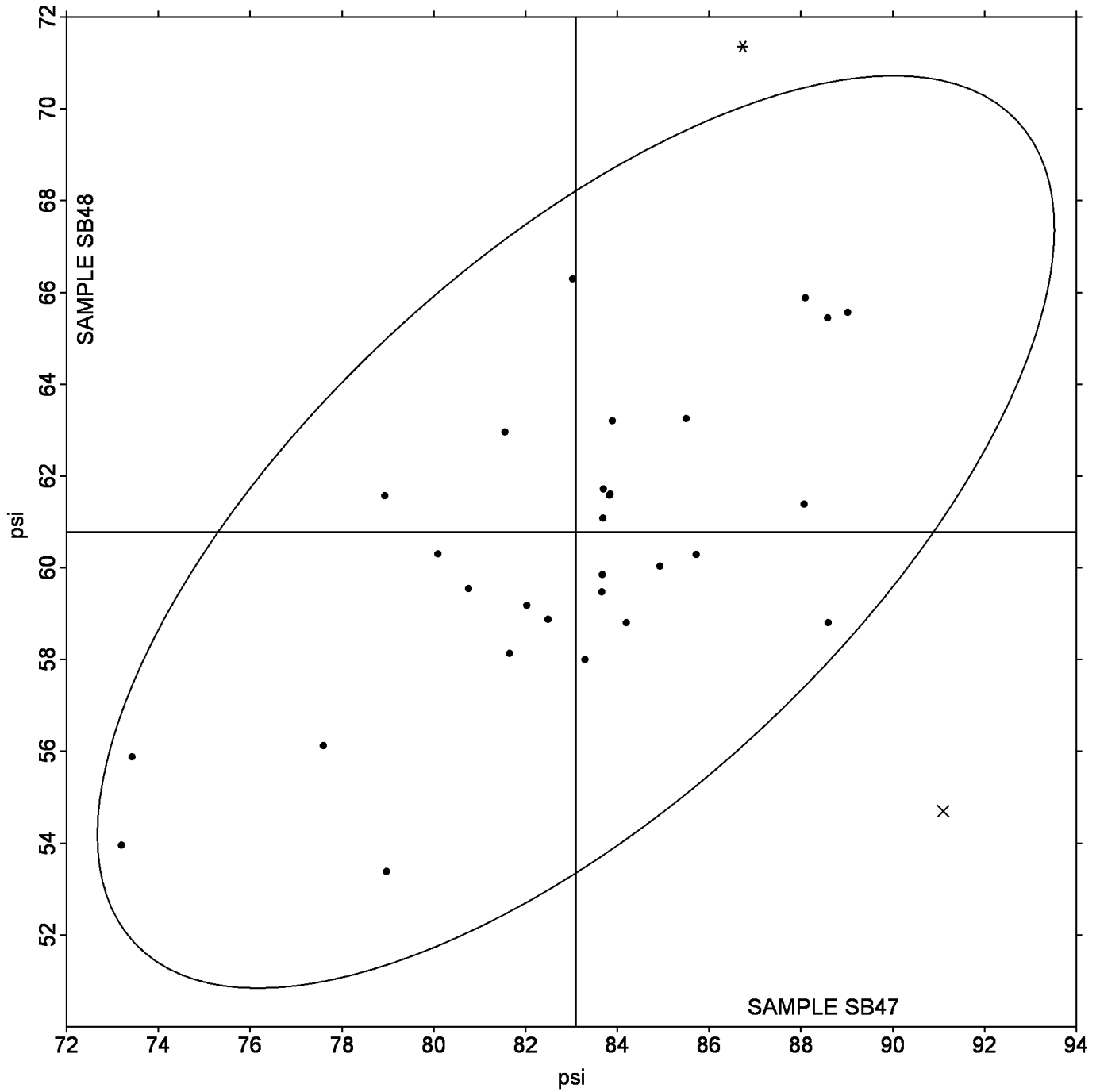
T6UE48 (X) - Inconsistent in testing between samples.

TAPPI-CTS Interlaboratory Testing Program
Analysis 310
Bursting Strength - Packaging Papers

Grand Mean Sample **SB47** = 83.095 psi

Grand Mean Sample **SB48** = 60.782 psi

ANALYSIS 310



TAPPI-CTS Interlaboratory Testing Program
Analysis 311
Tearing Strength - Newsprint

WebCode	Data Flag	Sample SK47			Sample SK48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1ZZBJG		20.36	0.18	0.10	20.86	0.30	0.18
6V1CM2		20.98	0.80	0.45	21.43	0.87	0.53
7VHJU5		21.10	0.92	0.52	21.51	0.95	0.58
9UTB86		18.65	-1.53	-0.88	19.45	-1.11	-0.68
AAUJM6		21.62	1.44	0.82	22.01	1.45	0.88
BQCGTK		19.95	-0.23	-0.13	20.78	0.22	0.13
D7F6GZ		22.45	2.27	1.29	22.47	1.91	1.16
ELVYJ7		20.09	-0.09	-0.05	20.37	-0.19	-0.12
MCU8U9		23.10	2.92	1.67	22.80	2.24	1.36
RGHUU6	X	32.40	12.22	6.97	21.50	0.94	0.57
VYZECT		17.43	-2.75	-1.57	18.25	-2.31	-1.41
W5FE4Q		18.58	-1.60	-0.92	18.70	-1.86	-1.13
XH1LQB		16.68	-3.50	-2.00	16.75	-3.81	-2.31
XMJSFK		21.12	0.94	0.53	21.27	0.71	0.43
YDWFA4		20.24	0.06	0.03	20.69	0.13	0.08
YK7RVQ		20.40	0.22	0.12	21.10	0.54	0.33

		Summary Statistics			
		Sample SK47		Sample SK48	
Grand Means		20.183 Grams		20.563 Grams	
SD Btwn Labs		1.752 Grams		1.646 Grams	
Statistics based on 15 of 16 reporting participants					

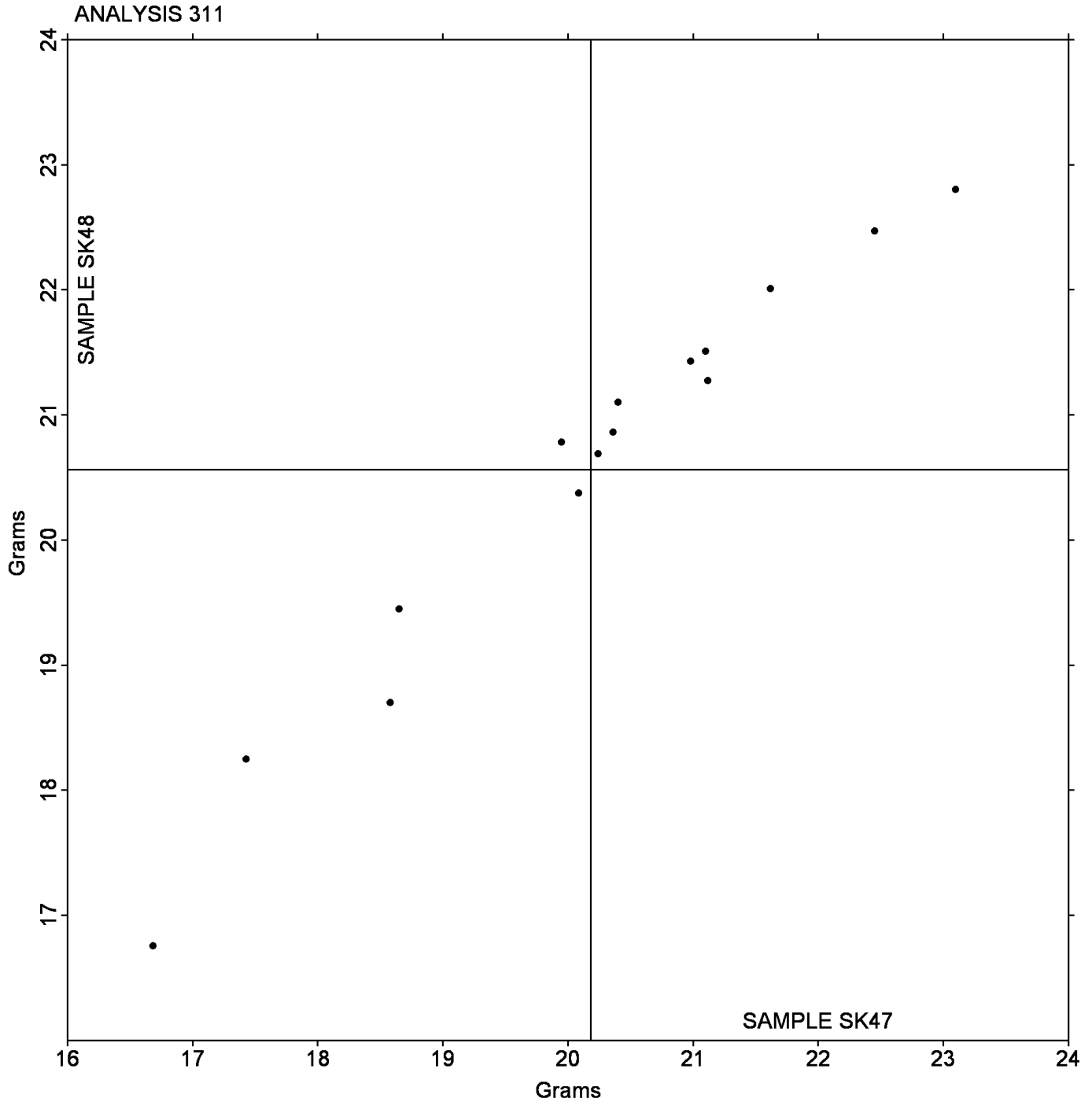
Comments on assigned Data Flags for Test #311

RGHUU6 (X) - Extreme data for Sample SK47.

TAPPI-CTS Interlaboratory Testing Program
Analysis 311
Tearing Strength - Newsprint

Grand Mean Sample **SK47** = 20.183 Grams

Grand Mean Sample **SK48** = 20.563 Grams



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program

Analysis 312

Tearing Strength - Printing Papers

WebCode	Data Flag	Sample SC47			Sample SC48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
18NPKV		63.54	4.11	1.40	52.56	1.41	0.66
1H75RJ		59.20	-0.23	-0.08	52.00	0.85	0.40
1S8THF		58.24	-1.19	-0.41	51.68	0.53	0.25
2QSULJ	X	26.35	-33.08	-11.29	30.91	-20.24	-9.55
2YCP41		56.84	-2.59	-0.88	48.70	-2.45	-1.16
3EPJLH		57.30	-2.13	-0.73	49.90	-1.25	-0.59
3T99XW		57.90	-1.53	-0.52	50.60	-0.55	-0.26
4SMVGS		63.44	4.01	1.37	52.30	1.15	0.54
5113TE		59.06	-0.37	-0.13	51.05	-0.10	-0.05
57DAZH		61.90	2.47	0.84	52.93	1.78	0.84
6QJJ9J		57.60	-1.83	-0.63	49.20	-1.95	-0.92
75BDZL		58.10	-1.33	-0.45	48.77	-2.38	-1.12
77ZQYR		56.36	-3.07	-1.05	50.65	-0.50	-0.24
7RAH4D		59.00	-0.43	-0.15	51.20	0.05	0.02
7XCK8E		59.31	-0.12	-0.04	50.56	-0.59	-0.28
7ZZUVF		60.03	0.60	0.20	52.72	1.57	0.74
856NNQ		55.54	-3.89	-1.33	49.48	-1.67	-0.79
87GZQ6		57.80	-1.63	-0.56	49.90	-1.25	-0.59
8EWVDD		53.84	-5.59	-1.91	48.80	-2.35	-1.11
94ZGDM	X	69.81	10.38	3.54	58.58	7.43	3.51
9BPCMQ		58.10	-1.33	-0.45	50.70	-0.45	-0.21
9HUJKM		58.60	-0.83	-0.28	51.10	-0.05	-0.02
9YXNNK		56.00	-3.43	-1.17	47.30	-3.85	-1.82
AALPHC		59.40	-0.03	-0.01	50.60	-0.55	-0.26
AUBG7V		53.67	-5.76	-1.97	47.42	-3.73	-1.76
BGTHJD		61.82	2.39	0.82	53.42	2.27	1.07
C9B626		59.28	-0.16	-0.05	49.20	-1.95	-0.92
CD31XY		58.74	-0.70	-0.24	51.39	0.24	0.11
F44HRU		62.49	3.06	1.04	53.02	1.87	0.88
FEF156		59.32	-0.11	-0.04	52.48	1.33	0.63
FZMBX1		57.28	-2.15	-0.73	50.94	-0.21	-0.10
G4FS1T		55.06	-4.37	-1.49	48.28	-2.87	-1.36
GCSW5K		61.11	1.68	0.57	51.83	0.68	0.32
H2RF2N		62.10	2.67	0.91	52.40	1.25	0.59
H5D5LD		56.33	-3.10	-1.06	47.93	-3.22	-1.52
H9MH4Z		64.68	5.25	1.79	54.02	2.87	1.35
HVKLVY		63.02	3.59	1.22	52.83	1.68	0.79
JKWVQY		61.84	2.40	0.82	50.76	-0.39	-0.18
K448NL		54.00	-5.43	-1.85	47.55	-3.60	-1.70
K4BYDH		61.56	2.13	0.73	53.49	2.34	1.11
K6SKMR		62.21	2.78	0.95	52.93	1.78	0.84
KNHMK6		61.23	1.80	0.61	50.72	-0.43	-0.20
MEECZZ	X	62.60	3.17	1.08	63.62	12.47	5.88

TAPPI-CTS Interlaboratory Testing Program
Analysis 312
Tearing Strength - Printing Papers

WebCode	Data Flag	Sample SC47			Sample SC48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MR88Y8	X	68.52	9.09	3.10	58.53	7.38	3.48
MTZBPU	*	68.42	8.99	3.07	56.29	5.14	2.42
MULKTH		61.04	1.61	0.55	52.90	1.75	0.83
MXBZN5		56.19	-3.24	-1.11	46.96	-4.19	-1.98
MZL53E	X	66.04	6.61	2.26	52.24	1.09	0.51
N7NJQT		60.44	1.01	0.34	52.40	1.25	0.59
NBY13J		58.60	-0.83	-0.28	50.30	-0.85	-0.40
NMC7R6	X	61.20	1.77	0.60	69.60	18.45	8.71
NQGZWP		58.80	-0.63	-0.22	49.60	-1.55	-0.73
NT6HH3		60.68	1.25	0.43	51.16	0.01	0.00
NTEBNW	X	69.39	9.96	3.40	60.96	9.81	4.63
NVNP3C		58.10	-1.33	-0.45	49.76	-1.39	-0.66
NY4AZJ	X	34.99	-24.44	-8.34	28.80	-22.35	-10.55
PXB2Y2		57.96	-1.47	-0.50	50.81	-0.34	-0.16
QDVA2Q		60.00	0.57	0.19	53.36	2.21	1.04
QKM3LB	X	66.16	6.73	2.30	39.18	-11.97	-5.65
QS9SLD		64.20	4.77	1.63	54.60	3.45	1.63
QWYETD	*	58.56	-0.87	-0.30	53.66	2.51	1.18
S6PNXE		58.23	-1.21	-0.41	50.37	-0.78	-0.37
ST4FCT		56.20	-3.23	-1.10	48.70	-2.45	-1.16
T45S8S	M	No data reported for this sample			72.08	20.93	9.88
TMVGBM		59.58	0.15	0.05	52.85	1.70	0.80
TNPXGB		59.58	0.15	0.05	52.52	1.37	0.65
U34MH5		59.40	-0.03	-0.01	49.60	-1.55	-0.73
U4B3B4		63.04	3.61	1.23	54.52	3.37	1.59
U5MGS5		57.38	-2.05	-0.70	49.60	-1.55	-0.73
V94TNC		57.12	-2.31	-0.79	51.20	0.05	0.02
VABRKV		65.87	6.44	2.20	54.07	2.92	1.38
VD1EDH		52.90	-6.53	-2.23	46.50	-4.65	-2.20
VR59KR	X	65.29	5.86	2.00	58.74	7.59	3.58
W5Z3LK		60.54	1.11	0.38	50.80	-0.35	-0.16
WFCVNT		62.97	3.54	1.21	54.61	3.46	1.63
WFFC5R		60.20	0.77	0.26	51.60	0.45	0.21
X73SCE		61.22	1.79	0.61	53.28	2.13	1.00
XUXH1R		60.05	0.62	0.21	50.40	-0.75	-0.35
Z7DEW5		58.90	-0.53	-0.18	48.90	-2.25	-1.06
ZEVTU4		61.78	2.35	0.80	54.79	3.64	1.72

TAPPI-CTS Interlaboratory Testing Program
Analysis 312
Tearing Strength - Printing Papers

	Sample SC47	Summary Statistics	Sample SC48
Grand Means	59.432 Grams		51.151 Grams
SD Btwn Labs	2.930 Grams		2.119 Grams
Statistics based on 69 of 80 reporting participants			

Comments on assigned Data Flags for Test #312

2QSULJ (X) - Extreme data.

94ZGDM (X) - Systematic error (data for both samples are high).

MEECZZ (X) - Extreme data for Sample SC48.

MR88Y8 (X) - Systematic error (data for both samples are high).

MZL53E (X) - Inconsistent in testing between samples and within the determinations for Sample SC47.

NMC7R6 (X) - Extreme data for Sample SC48.

NTEBNW (X) - Systematic error (data for both samples are high).

NY4AZJ (X) - Extreme data.

QKM3LB (X) - Extreme data for Sample SC48.

T45S8S (M) - No data for Sample SC47. Extreme data for Sample SC48.

VR59KR (X) - Inconsistent in testing between samples, data for Sample SC48 are high.

Analysis Notes:

7XCK8E - One determination removed from the Lab Mean of Sample SC48 per Grubb's Test at 1% risk (TAPPI 1205).

TAPPI-CTS Interlaboratory Testing Program

Analysis 314

Tearing Strength - Packaging Papers

WebCode	Data Flag	Sample SD47			Sample SD48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
13S5US		212.7	0.6	0.05	169.7	1.8	0.21
246NXP		216.0	3.9	0.34	161.8	-6.0	-0.68
2C75Z1		212.1	0.0	0.00	163.5	-4.3	-0.49
36ZA7B		210.4	-1.7	-0.15	161.0	-6.8	-0.76
3FMZDC		217.9	5.8	0.50	175.9	8.1	0.91
4RYBTN		238.8	26.7	2.31	189.6	21.8	2.45
4YTGMQ		214.4	2.3	0.20	170.8	3.0	0.33
5G77FS		212.0	-0.1	-0.01	162.9	-4.9	-0.55
6HF51F		213.5	1.4	0.12	174.2	6.3	0.71
6TJHC2		204.4	-7.7	-0.67	168.4	0.6	0.06
837V1H		198.0	-14.1	-1.22	157.7	-10.2	-1.14
AWR64Z		210.7	-1.5	-0.13	174.3	6.5	0.73
C3SFP6		211.2	-0.9	-0.08	168.9	1.1	0.12
CBX7Q1		208.6	-3.6	-0.31	170.1	2.3	0.26
CJP3GY		214.3	2.2	0.19	173.7	5.8	0.66
CPNU48		203.5	-8.6	-0.75	154.9	-12.9	-1.45
EB21JK		219.5	7.4	0.64	173.7	5.9	0.66
ETBJX5		209.5	-2.6	-0.23	168.0	0.2	0.02
FE3A5M		197.0	-15.1	-1.31	156.3	-11.5	-1.30
FKDX1H		192.1	-20.0	-1.74	148.5	-19.3	-2.17
GD5TQ9		208.5	-3.6	-0.32	164.5	-3.4	-0.38
GRZ548		191.0	-21.1	-1.83	156.2	-11.6	-1.31
GVBXDM		228.0	15.9	1.38	179.6	11.8	1.32
H656JP		209.0	-3.1	-0.27	168.0	0.2	0.02
HRDPVX		233.6	21.5	1.86	177.4	9.6	1.08
JUR1W6		214.6	2.5	0.21	161.9	-5.9	-0.67
LLF77W		232.7	20.6	1.78	181.6	13.8	1.55
NXG51U		221.2	9.1	0.79	181.4	13.6	1.53
PCMEZC		211.9	-0.3	-0.02	164.4	-3.5	-0.39
RGWAZ7		207.1	-5.0	-0.44	164.2	-3.6	-0.41
RP3QZG		227.4	15.2	1.32	177.7	9.8	1.11
S6Y6FS		211.8	-0.3	-0.03	165.1	-2.8	-0.31
SPCMHL		221.6	9.5	0.82	174.8	7.0	0.78
SQPA2J		206.8	-5.3	-0.46	174.0	6.2	0.69
SU4YP3		190.1	-22.0	-1.91	156.6	-11.2	-1.26
SW6V3B		200.9	-11.2	-0.97	152.8	-15.1	-1.69
T37U7S		229.4	17.3	1.50	183.7	15.9	1.78
TLXTRQ		202.7	-9.4	-0.82	165.0	-2.9	-0.32
TMJQRB		186.8	-25.3	-2.19	151.7	-16.1	-1.81
UFUE6E		213.4	1.2	0.11	167.7	-0.2	-0.02
UZK9HW		231.0	18.8	1.63	174.0	6.2	0.69
W7Y1FD		221.3	9.2	0.79	172.8	4.9	0.56
WB75ST		206.8	-5.3	-0.46	167.6	-0.3	-0.03

TAPPI-CTS Interlaboratory Testing Program
Analysis 314
Tearing Strength - Packaging Papers

WebCode	Data Flag	Sample SD47			Sample SD48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
X465UB		217.0	4.9	0.42	164.6	-3.2	-0.36
X68QG4		214.0	1.9	0.16	172.1	4.2	0.48
X6UGUH	X	175.6	-36.5	-3.16	164.8	-3.0	-0.34
XQ74FQ		212.9	0.8	0.07	164.2	-3.6	-0.40
Z5Z5BT	X	25.4	-186.7	-16.18	17.8	-150.1	-16.88
ZDG84E		202.0	-10.1	-0.88	160.8	-7.0	-0.79

		Sample SD47	Summary Statistics	Sample SD48
Grand Means		212.12 Grams		167.83 Grams
SD Btwn Labs		11.54 Grams		8.89 Grams
Statistics based on 47 of 49 reporting participants				

Comments on assigned Data Flags for Test #314

X6UGUH (X) - Inconsistent in testing between samples, data for Sample SD47 are low.

Z5Z5BT (X) - Extreme data.

Analysis Notes:

LLF77W - Data appear to be off by a factor of 1/4; data converted by CTS (x4).

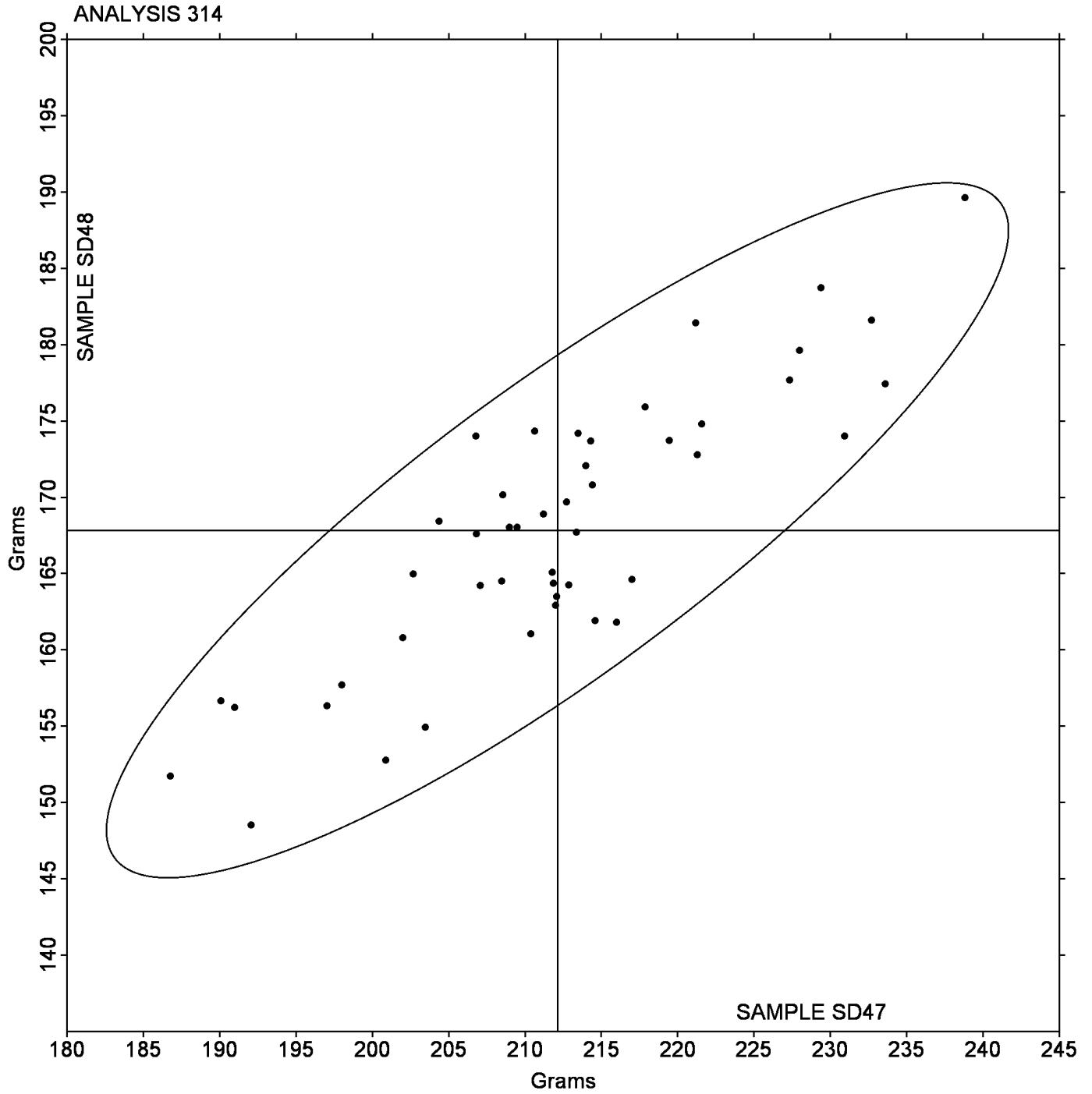
X465UB - Data appear to be off by a factor of 4; data converted by CTS (/4).

XQ74FQ - Data appear to be off by a factor of 1/4; data converted by CTS (x4).

TAPPI-CTS Interlaboratory Testing Program
Analysis 314
Tearing Strength - Packaging Papers

Grand Mean Sample **SD47** = 212.12 Grams

Grand Mean Sample **SD48** = 167.83 Grams



TAPPI-CTS Interlaboratory Testing Program
Analysis 320
Tensile Breaking Strength - Newsprint

WebCode	Data Flag	Sample SR47			Sample SR48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3FN6KY		1.974	0.037	0.33	2.024	0.106	0.90
4K8GMF		2.029	0.092	0.81	2.037	0.119	1.02
4SX1G9		2.023	0.086	0.76	1.845	-0.073	-0.62
5XTP83		2.074	0.138	1.21	1.990	0.073	0.62
6LVV4P		1.918	-0.019	-0.17	1.908	-0.009	-0.08
76GU5D		1.951	0.014	0.13	1.927	0.009	0.08
7J21RZ		1.855	-0.082	-0.72	1.849	-0.068	-0.58
7JB8C		1.911	-0.026	-0.23	1.926	0.008	0.07
A3C5ML		1.907	-0.030	-0.26	1.826	-0.091	-0.78
B7NBR6		1.942	0.005	0.05	1.984	0.067	0.57
F8HARV		2.213	0.277	2.43	2.175	0.258	2.19
HPPUYB	X	1.016	-0.921	-8.09	0.758	-1.160	-9.88
JXRLTY		1.855	-0.082	-0.72	1.869	-0.049	-0.41
LHSV7R		1.905	-0.032	-0.28	1.907	-0.011	-0.09
NSMBQL		2.118	0.181	1.59	2.117	0.200	1.70
Q14VNP		1.809	-0.127	-1.12	1.889	-0.028	-0.24
SWK8FN		1.799	-0.137	-1.21	1.713	-0.205	-1.74
UWPUEL		1.834	-0.102	-0.90	1.809	-0.108	-0.92
VV6QG1	X	1.571	-0.365	-3.21	1.557	-0.361	-3.07
XTZRRH		1.898	-0.039	-0.34	1.896	-0.021	-0.18
Y4KDG Y		1.782	-0.155	-1.36	1.742	-0.176	-1.50

	Sample SR47	Summary Statistics	Sample SR48
Grand Means	1.9366 kN/m		1.9175 kN/m
SD Btwn Labs	0.1138 kN/m		0.1174 kN/m
Statistics based on 19 of 21 reporting participants			

Comments on assigned Data Flags for Test #320

HPPUYB (X) - Extreme data.

VV6QG1 (X) - Systematic error (data for both samples are low).

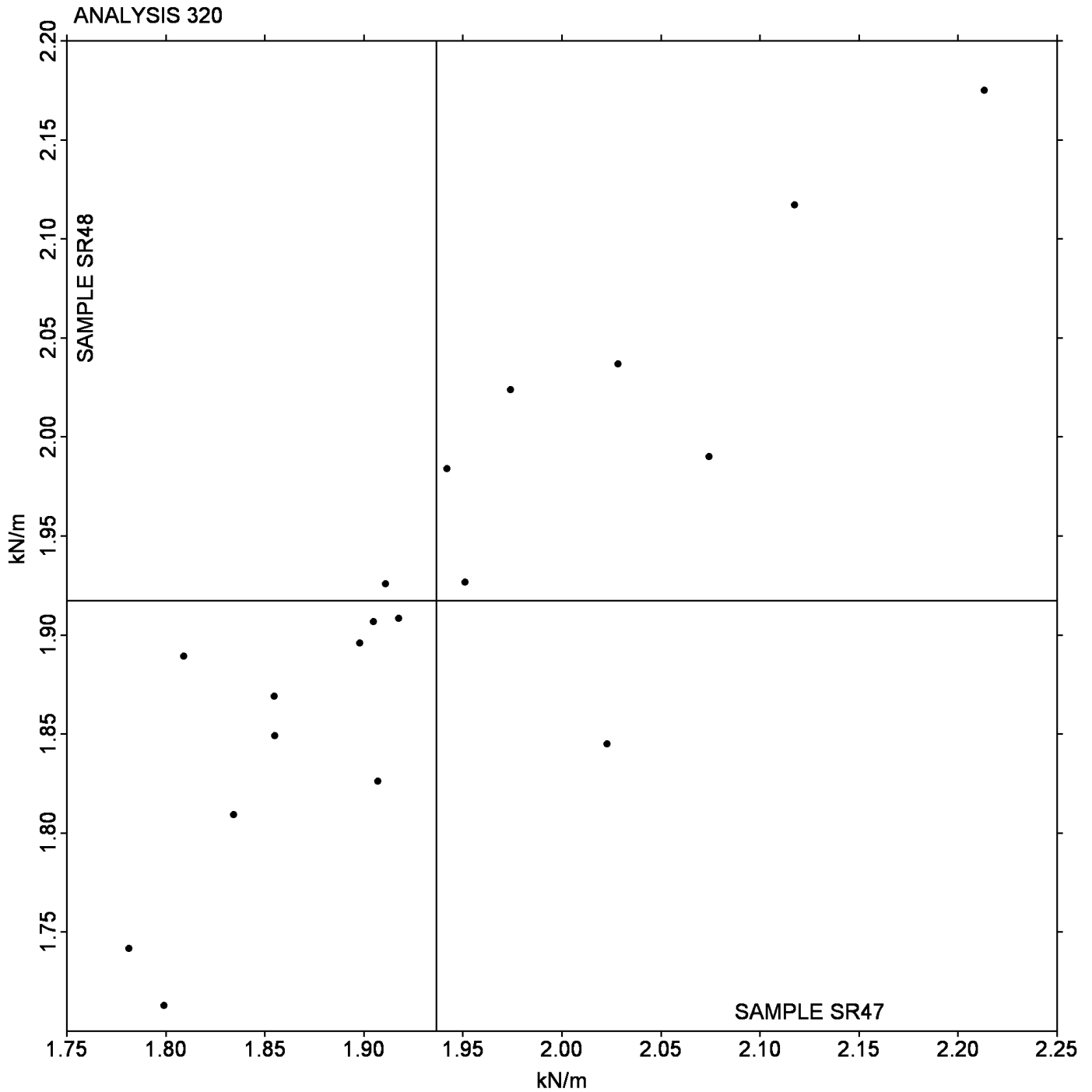
Analysis Notes:

3FN6KY - Data appear to be off by a factor of 10; data converted by CTS (/10).

TAPPI-CTS Interlaboratory Testing Program
Analysis 320
Tensile Breaking Strength - Newsprint

Grand Mean Sample **SR47** = 1.9366 kN/m

Grand Mean Sample **SR48** = 1.9175 kN/m



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 321
Tensile Energy Absorption - Newsprint

WebCode	Data Flag	Sample SR47			Sample SR48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
47WSFT		12.52	1.73	1.02	11.82	1.02	0.66
4BEBUE		10.24	-0.55	-0.32	9.94	-0.86	-0.55
4QWSQ6	X	15.62	4.83	2.84	14.12	3.33	2.14
4X37QF		10.56	-0.22	-0.13	11.56	0.76	0.49
CQC964		12.83	2.04	1.20	13.32	2.52	1.63
GWJV44		12.87	2.08	1.22	12.17	1.37	0.88
J6Y21A		12.37	1.58	0.93	12.22	1.43	0.92
JAC7NR		14.67	3.89	2.28	13.43	2.64	1.70
JWVSSZ		9.70	-1.09	-0.64	9.64	-1.15	-0.74
LQHZKT		10.00	-0.78	-0.46	10.79	-0.01	0.00
M2HGBE		9.84	-0.94	-0.55	10.91	0.11	0.07
Q35UTN		10.98	0.20	0.12	8.84	-1.96	-1.26
SSQEJM	X	9.89	-0.89	-0.52	9.18	-1.62	-1.04
U7SE8K		9.47	-1.31	-0.77	9.63	-1.17	-0.75
USQJL		11.10	0.32	0.19	11.78	0.99	0.64
VQFVEF		8.69	-2.10	-1.23	9.09	-1.71	-1.10
WKZCCJ		9.03	-1.76	-1.03	9.14	-1.66	-1.07
X12YDX		9.04	-1.75	-1.03	8.39	-2.40	-1.55
XYBBXA		9.44	-1.34	-0.79	10.86	0.06	0.04

Summary Statistics		
	Sample SR47	Sample SR48
Grand Means	10.785 Joules/sq m	10.795 Joules/sq m
SD Btwn Labs	1.702 Joules/sq m	1.552 Joules/sq m
Statistics based on 17 of 19 reporting participants		

Comments on assigned Data Flags for Test #321

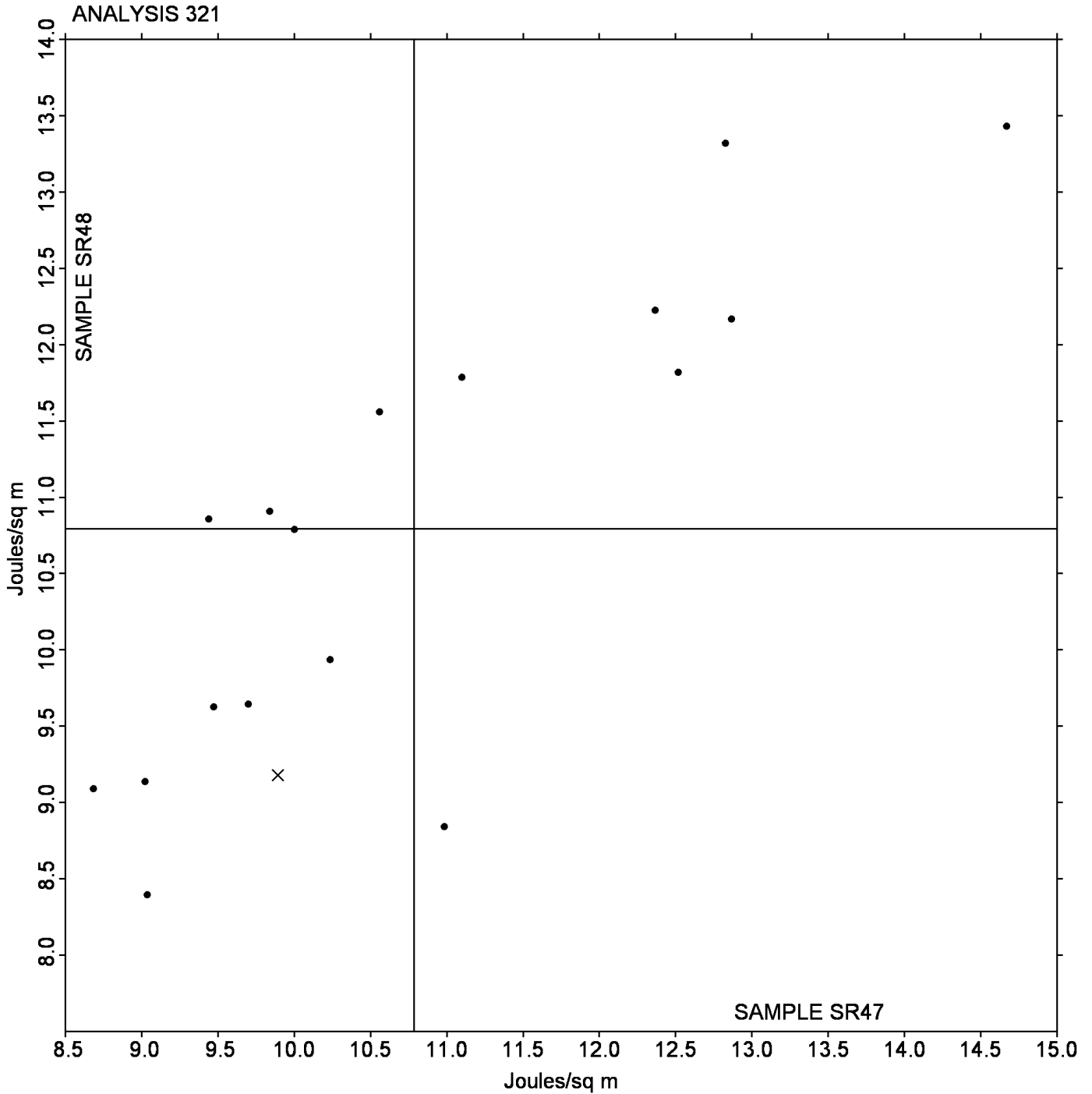
4QWSQ6 (X) - Inconsistent in testing between samples, data for Sample SR47 are high.

SSQEJM (X) - Data appear to be off by a factor of 10; data converted by CTS (/10).

TAPPI-CTS Interlaboratory Testing Program
Analysis 321
Tensile Energy Absorption - Newsprint

Grand Mean Sample **SR47** = 10.785 Joules/sq m

Grand Mean Sample **SR48** = 10.795 Joules/sq m



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 322
Elongation to Break - Newsprint

WebCode	Data Flag	Sample SR47			Sample SR48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3QDMD9		0.9170	-0.0023	-0.03	0.8530	-0.0709	-0.77
5UVXVG		0.8760	-0.0433	-0.54	0.8510	-0.0729	-0.79
5WZ499		1.0300	0.1107	1.39	1.0300	0.1061	1.15
67F5G3	X	1.2728	0.3535	4.45	1.2155	0.2916	3.16
6QSJJB		0.8500	-0.0693	-0.87	0.8490	-0.0749	-0.81
74AYE3	X	1.2500	0.3307	4.16	1.2130	0.2891	3.14
9JDPC4		0.8600	-0.0593	-0.75	0.8700	-0.0539	-0.58
AUJX2V		0.9110	-0.0083	-0.10	0.8970	-0.0269	-0.29
CLHF83		1.0905	0.1712	2.16	1.1272	0.2032	2.20
DABJL6		1.0000	0.0807	1.02	0.9670	0.0431	0.47
G8RDMB	X	1.2700	0.3507	4.41	1.2600	0.3361	3.64
GC79HV		0.8270	-0.0923	-1.16	0.8029	-0.1211	-1.31
J9MQ55		0.9411	0.0219	0.28	1.0016	0.0777	0.84
PL7ERB		0.8490	-0.0703	-0.88	0.9070	-0.0169	-0.18
PXLFJP		0.9365	0.0172	0.22	0.9935	0.0695	0.75
S16FAN		0.9671	0.0478	0.60	1.0370	0.1131	1.23
X86TUC		0.7824	-0.1369	-1.72	0.8108	-0.1131	-1.23
XMW3VV		0.9190	-0.0003	0.00	0.9030	-0.0209	-0.23
ZH19B8		0.9520	0.0327	0.41	0.8830	-0.0409	-0.44

		Summary Statistics	
	Sample SR47		Sample SR48
Grand Means	0.91929 Percent		0.92393 Percent
SD Btwn Labs	0.07944 Percent		0.09220 Percent
Statistics based on 16 of 19 reporting participants			

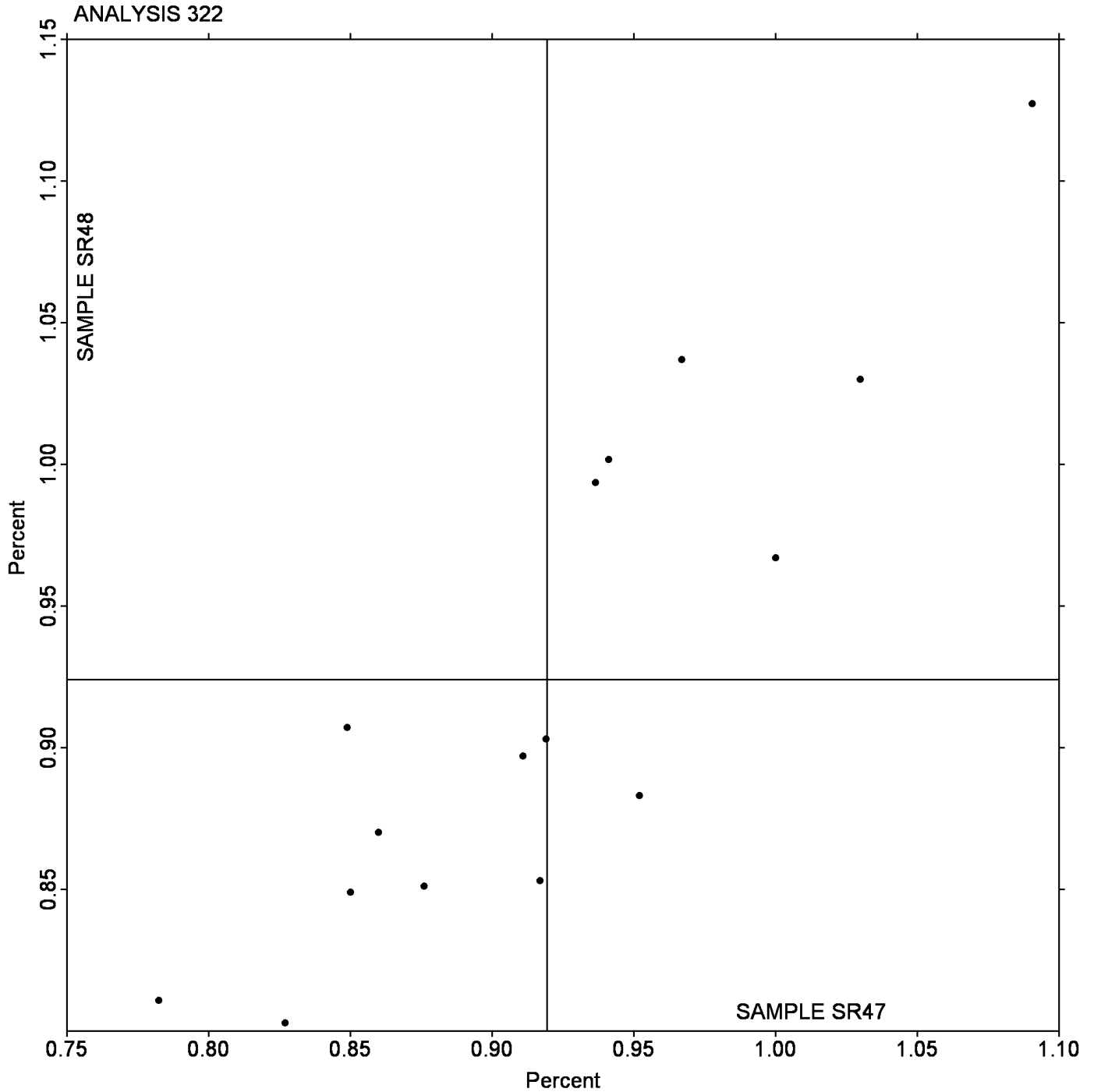
Comments on assigned Data Flags for Test #322

- 67F5G3 (X) - Systematic error (data for both samples are high).
- 74AYE3 (X) - Systematic error (data for both samples are high).
- G8RDMB (X) - Systematic error (data for both samples are high).

TAPPI-CTS Interlaboratory Testing Program
Analysis 322
Elongation to Break - Newsprint

Grand Mean Sample **SR47** = 0.91929 Percent

Grand Mean Sample **SR48** = 0.92393 Percent



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 325
Tensile Breaking Strength - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
28W45H		5.592	0.033	0.11	4.848	0.051	0.18	TP
3FLYXS		5.517	-0.043	-0.14	4.932	0.136	0.49	LH
3KVCFD		5.143	-0.416	-1.35	4.441	-0.355	-1.28	TO
3WV4MA		5.518	-0.042	-0.13	4.707	-0.089	-0.32	TF
472PV4		5.688	0.128	0.42	5.089	0.293	1.05	LH
49CVN6		5.729	0.170	0.55	4.908	0.111	0.40	TO
5DMKES		5.294	-0.265	-0.86	4.505	-0.292	-1.05	RE
5F85BV		5.611	0.052	0.17	5.006	0.210	0.75	LH
5KNSQ1		5.980	0.421	1.37	5.279	0.482	1.74	TJ
691G6D		5.900	0.340	1.10	4.986	0.189	0.68	TI
6MV79D		5.890	0.331	1.07	5.020	0.223	0.80	LH
6WM62P		5.223	-0.336	-1.09	4.537	-0.260	-0.93	DL
6YQFWK		5.429	-0.131	-0.42	4.655	-0.142	-0.51	MR
74TH68		5.952	0.392	1.27	5.202	0.405	1.46	LH
75136P		5.477	-0.082	-0.27	4.579	-0.218	-0.78	IM
77DLEL		6.054	0.495	1.61	5.190	0.394	1.42	TB
7DYVA2		4.831	-0.728	-2.36	4.151	-0.645	-2.32	VM
7NMNSZ		5.600	0.041	0.13	4.892	0.096	0.34	LH
7SV9BR		5.495	-0.064	-0.21	4.834	0.037	0.13	TJ
89C5CX		5.697	0.137	0.45	4.837	0.040	0.14	IA
8M7UFX		5.100	-0.459	-1.49	4.384	-0.413	-1.48	XX
8QM7BD		6.162	0.602	1.96	5.213	0.416	1.50	LA
9EYCFN		5.144	-0.415	-1.35	4.454	-0.343	-1.23	ID
AACF1R		5.836	0.276	0.90	5.170	0.373	1.34	LH
BN7TB9		5.299	-0.260	-0.84	4.604	-0.192	-0.69	TB
BYWTQ5		5.557	-0.003	-0.01	4.732	-0.065	-0.23	TO
C2DCAZ		5.599	0.039	0.13	4.896	0.099	0.36	TJ
CER9CN	*	5.534	-0.025	-0.08	4.467	-0.329	-1.18	TJ
CXQNB9	*	6.516	0.957	3.11	5.555	0.758	2.73	XX
D48HJR		5.826	0.267	0.87	4.905	0.109	0.39	TO
ECH58A	*	5.479	-0.081	-0.26	5.080	0.283	1.02	XX
ETKZFX		5.596	0.037	0.12	4.701	-0.096	-0.35	TB
F5H2MK		5.116	-0.443	-1.44	4.394	-0.403	-1.45	IK
FL6B9N		5.609	0.050	0.16	4.629	-0.168	-0.60	LI
G2E4R4		5.293	-0.267	-0.87	4.589	-0.207	-0.75	IK
G6TSCL		5.519	-0.041	-0.13	4.813	0.016	0.06	TB
GEX8YE		5.398	-0.161	-0.52	4.634	-0.163	-0.59	LH
GVWFQ8		5.067	-0.493	-1.60	4.199	-0.598	-2.15	SP
HE9GET	X	5.215	-0.345	-1.12	4.948	0.151	0.54	LH
HM22WM		5.830	0.271	0.88	4.965	0.168	0.61	LH
K76Z5Y		5.658	0.099	0.32	4.693	-0.103	-0.37	VM
KJAWG1		5.100	-0.459	-1.49	4.327	-0.469	-1.69	LA
KM8CWF	X	3.394	-2.165	-7.03	2.828	-1.969	-7.08	TB

TAPPI-CTS Interlaboratory Testing Program
Analysis 325
Tensile Breaking Strength - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
KU8HJC		5.896	0.337	1.09	5.157	0.361	1.30	LX
L2ME95	X	5.569	0.010	0.03	4.021	-0.775	-2.79	TI
M3WT8Y		5.573	0.013	0.04	4.716	-0.081	-0.29	TO
MDF79E		6.160	0.600	1.95	5.245	0.448	1.61	LH
MK6443		4.955	-0.605	-1.96	4.379	-0.418	-1.50	IX
N5BERR		5.616	0.057	0.18	4.897	0.100	0.36	TP
NHHCU5		5.465	-0.094	-0.31	4.854	0.057	0.21	IM
NRH6JX		5.936	0.377	1.22	4.936	0.139	0.50	TA
Q8AMRZ		5.524	-0.036	-0.12	4.628	-0.169	-0.61	IM
QTEDYS		5.930	0.371	1.20	5.248	0.452	1.62	LH
RDR7YD		5.465	-0.094	-0.31	4.790	-0.007	-0.02	LX
T8GKG7		5.510	-0.049	-0.16	4.758	-0.039	-0.14	LH
T9F67Y		5.384	-0.175	-0.57	4.691	-0.105	-0.38	TX
TA8N8T	X	5.076	-0.483	-1.57	4.776	-0.021	-0.07	IN
TU81MT		5.512	-0.047	-0.15	4.737	-0.060	-0.22	TO
TVSBPD		5.402	-0.157	-0.51	4.720	-0.076	-0.27	KA
UZX9EJ		5.342	-0.217	-0.71	4.773	-0.024	-0.08	LH
VFHKDR		5.438	-0.121	-0.39	4.680	-0.117	-0.42	LH
VGMQLE		5.348	-0.211	-0.69	4.528	-0.269	-0.97	ID
W39ZVY		5.026	-0.533	-1.73	4.438	-0.359	-1.29	LH
WEP7XC		5.469	-0.090	-0.29	4.597	-0.200	-0.72	TO
WFK1F3		5.370	-0.189	-0.61	4.725	-0.072	-0.26	LH
XCCDCQ		5.206	-0.354	-1.15	4.760	-0.036	-0.13	LH
XJ3EK3		5.348	-0.211	-0.69	4.636	-0.161	-0.58	LH
XS1CVR		5.696	0.137	0.44	4.705	-0.091	-0.33	LH
XTUS29		5.749	0.190	0.62	4.786	-0.010	-0.04	TI
XY8MJD		5.690	0.131	0.42	5.044	0.247	0.89	LH
Y1W2HS		5.629	0.070	0.23	4.890	0.094	0.34	TC
Y98NKP		5.774	0.215	0.70	4.844	0.047	0.17	LI
Y9K2QQ		5.762	0.203	0.66	5.081	0.285	1.02	LX
YKGH9U		5.882	0.323	1.05	5.211	0.415	1.49	TP
ZCMU89		5.799	0.240	0.78	5.104	0.307	1.11	LI

Sample SF47		Summary Statistics	Sample SF48	
Grand Means	5.5594 kN/m		4.7966 kN/m	
SD Btwn Labs	0.3080 kN/m		0.2780 kN/m	
Statistics based on 71 of 75 reporting participants				

TAPPI-CTS Interlaboratory Testing Program
Analysis 325
Tensile Breaking Strength - Printing Papers

Comments on assigned Data Flags for Test #325

HE9GET (X) - Inconsistent in testing between samples and within the determinations for Sample SF47.

KM8CWF (X) - Extreme data.

L2ME95 (X) - Inconsistent in testing between samples, data for Sample SF48 are low.

TA8N8T (X) - Inconsistent in testing between samples.

Analysis Notes:

691G6D - Data appear to be off by a factor of 1000; data converted by CTS (/1000).

7NMNSZ - Data appear to be off by a factor of 1000; data converted by CTS (/1000).

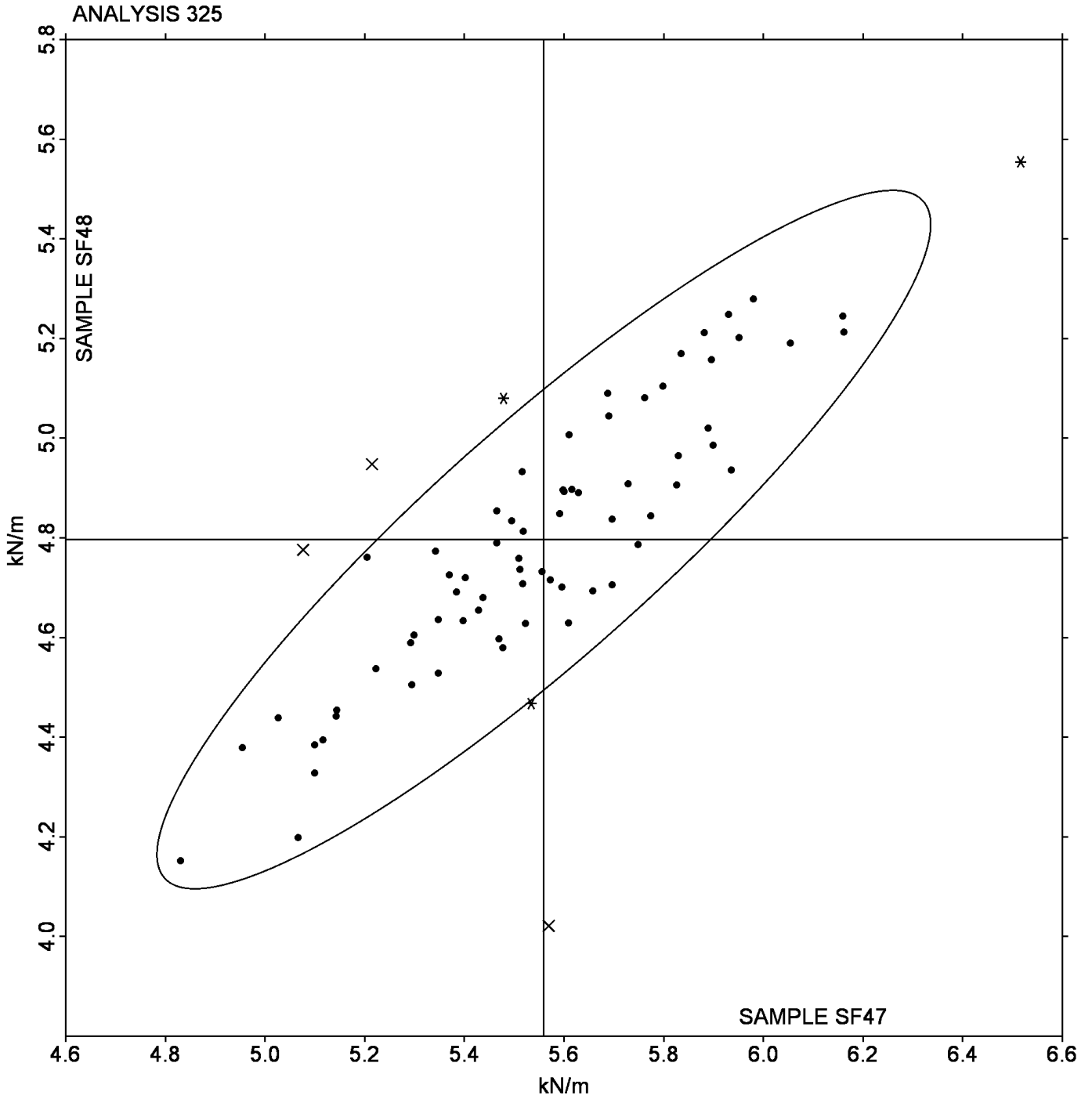
Instrument Code List

(DL) - EMIC DL500 Universal Testing Machines	(IA) - Instron 1011
(ID) - Instron 4201/4202	(IK) - Instron 4400 Series
(IM) - Instron 5500 Series	(IN) - Instron 3340 series
(IX) - Instron (model not specified)	(KA) - Zwick Model 1425
(LA) - L & W Tensile - Autoline 300	(LH) - L & W Alwetron TH1 (Horizontal) SE 060/065F
(LI) - L & W Tensile Tester SE 062	(LX) - L & W (model not specified)
(MR) - MTS Alliance RT series	(RE) - Regmed
(SP) - Schopper Type Tensile Tester (TMI)	(TA) - Testometric AX
(TB) - Thwing-Albert EJA/1000	(TC) - Thwing-Albert Electro-Hydraulic, Model 30LT
(TF) - Thwing-Albert EJA Vantage-1	(TI) - Thwing-Albert QC II
(TJ) - Thwing-Albert QC II-XS	(TO) - Thwing-Albert QC-1000
(TP) - TMI Monitor/Tensile 100 (84-21-01)	(TX) - Thwing-Albert (model not specified)
(VM) - Valmet PaperLab (was Kajaani/Robotest)	(XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program
Analysis 325
Tensile Breaking Strength - Printing Papers

Grand Mean Sample SF47 = 5.5594 kN/m

Grand Mean Sample SF48 = 4.7966 kN/m



TAPPI-CTS Interlaboratory Testing Program

Analysis 327

Tensile Energy Absorption - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2VE6L1		80.46	1.76	0.27	64.91	-1.18	-0.27	LI
3K7TLY		72.24	-6.46	-0.99	64.10	-1.99	-0.46	LH
3Q62AT		71.68	-7.03	-1.08	56.90	-9.19	-2.14	LH
44MX3F		80.73	2.02	0.31	65.24	-0.85	-0.20	IK
5SRJS4		78.08	-0.63	-0.10	69.61	3.52	0.82	VM
6AG6JL		69.29	-9.41	-1.44	62.86	-3.23	-0.75	IM
6TKRDT	*	69.18	-9.53	-1.46	71.42	5.33	1.24	LI
6WGFSE		66.23	-12.48	-1.91	59.85	-6.25	-1.45	IN
7JFCAC		84.67	5.97	0.91	67.86	1.77	0.41	TO
7KFKVZ		70.39	-8.32	-1.27	64.90	-1.19	-0.28	LH
8ZQBD3		71.98	-6.73	-1.03	67.89	1.80	0.42	LH
A2DG6P	X	53.87	-24.83	-3.80	40.59	-25.50	-5.92	TB
AE94FC		73.20	-5.51	-0.84	59.24	-6.85	-1.59	LH
CKKP1G	*	85.24	6.54	1.00	77.70	11.61	2.70	LA
DHMR52		88.73	10.03	1.53	73.85	7.75	1.80	XX
EGZRAB		87.21	8.51	1.30	72.08	5.99	1.39	TA
EKLFUP		84.76	6.06	0.93	69.95	3.86	0.90	TB
ENCKSF		88.43	9.73	1.49	67.35	1.26	0.29	IM
F3DAP4		73.73	-4.98	-0.76	60.07	-6.02	-1.40	LA
G2URHD		74.97	-3.74	-0.57	67.93	1.84	0.43	LH
GAGHDX		84.32	5.61	0.86	70.20	4.11	0.95	LH
GGLP8M	X	74.08	-4.63	-0.71	58.76	-7.34	-1.70	TO
HA5ZB5		86.82	8.11	1.24	64.55	-1.54	-0.36	IM
HCA24A		77.98	-0.72	-0.11	61.57	-4.52	-1.05	LH
HER3V3		72.64	-6.06	-0.93	66.64	0.55	0.13	LH
HNMGR		76.36	-2.34	-0.36	64.97	-1.12	-0.26	LX
JLY8G6		78.80	0.10	0.01	61.75	-4.34	-1.01	MR
JQX1TW		83.42	4.72	0.72	72.04	5.95	1.38	LH
L23KLN		80.96	2.26	0.35	63.89	-2.20	-0.51	ID
L88G69		80.07	1.36	0.21	65.71	-0.38	-0.09	DL
LAQD8Z		86.28	7.57	1.16	72.40	6.31	1.47	LH
LZE8LH		87.63	8.92	1.37	67.38	1.29	0.30	LI
M8FMZJ		74.66	-4.04	-0.62	60.54	-5.55	-1.29	XX
MVNNNZ		68.62	-10.09	-1.54	61.14	-4.95	-1.15	LH
N3W7BA		78.29	-0.42	-0.06	63.87	-2.22	-0.52	LH
NC3CE6		76.86	-1.84	-0.28	69.50	3.41	0.79	LH
NGHS5X		81.13	2.42	0.37	65.99	-0.10	-0.02	XX
QVX4KJ		83.10	4.40	0.67	69.10	3.01	0.70	LI
U4KWGX	X	3.95	-74.76	-11.44	3.91	-62.18	-14.44	TP
U688F3		80.85	2.14	0.33	70.58	4.48	1.04	LX
UTB2SS		81.70	3.00	0.46	64.09	-2.00	-0.46	LI
UVHXH3		73.89	-4.82	-0.74	63.05	-3.04	-0.71	ID
VEADLJ		73.94	-4.77	-0.73	65.52	-0.57	-0.13	LH

TAPPI-CTS Interlaboratory Testing Program
Analysis 327
Tensile Energy Absorption - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
W3RDDP		77.98	-0.73	-0.11	66.87	0.78	0.18	IM
W85HD9		76.06	-2.65	-0.41	62.60	-3.49	-0.81	KA
X3E5X1		71.54	-7.16	-1.10	63.64	-2.46	-0.57	LH
XNYX58		86.69	7.98	1.22	63.48	-2.61	-0.61	TI
YFR1AA		73.80	-4.90	-0.75	64.20	-1.89	-0.44	LH
ZB297J	X	4.51	-74.19	-11.36	3.52	-62.57	-14.53	TP
ZJT99J		94.86	16.16	2.47	71.22	5.13	1.19	VM

Sample SF47		Summary Statistics	Sample SF48	
Grand Means	78.704 Joules/sq m		66.091 Joules/sq m	
SD Btw Labs	6.532 Joules/sq m		4.307 Joules/sq m	
Statistics based on 46 of 50 reporting participants				

Comments on assigned Data Flags for Test #327

A2DG6P (X) - Extreme data.

GGLP8M (X) - Data appear to be off by a factor of 1000; data converted by CTS (/1000).

U4KWGX (X) - Extreme data.

ZB297J (X) - Extreme data.

Instrument Code List

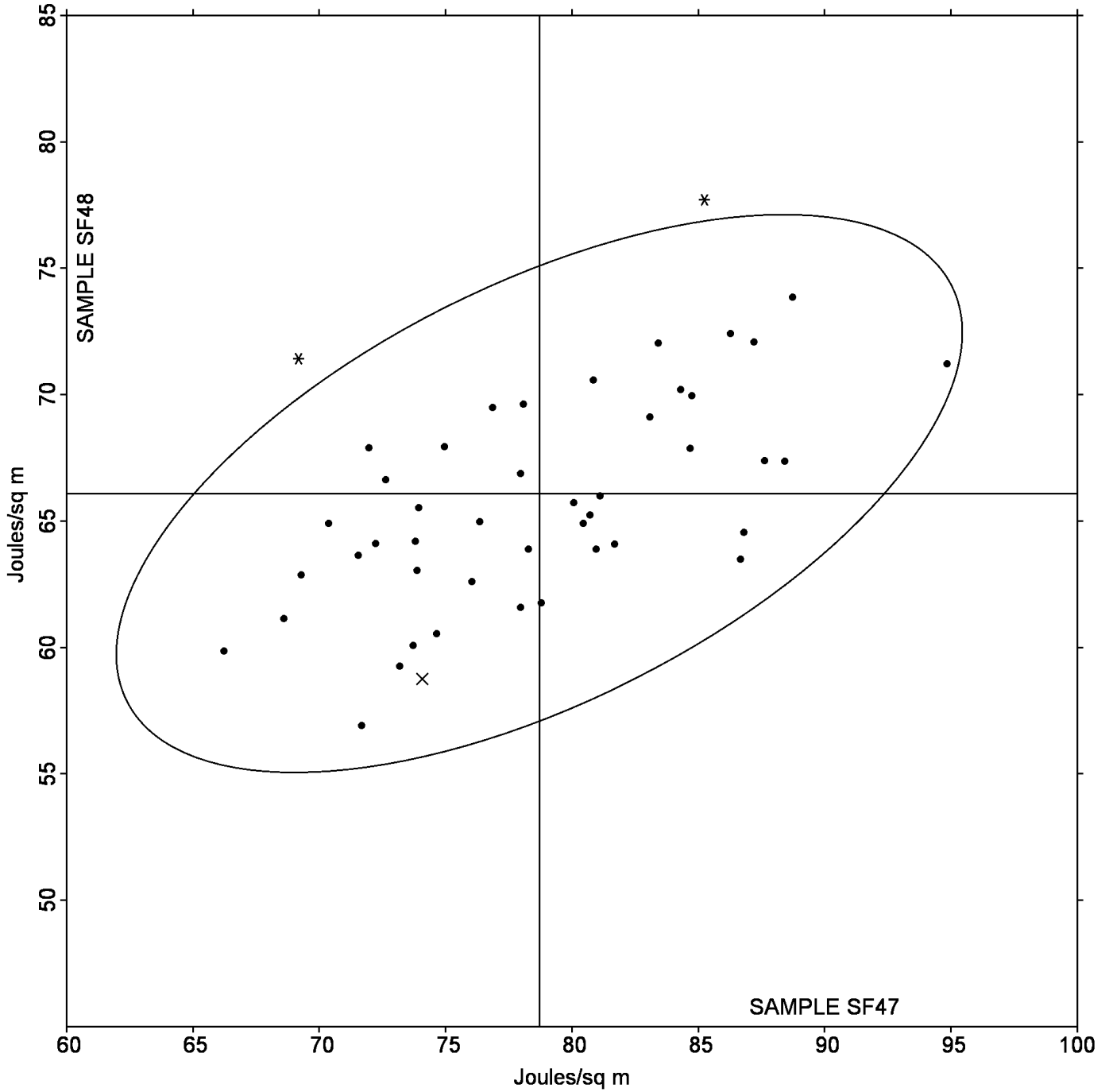
- | | |
|---|---|
| (DL) - EMIC DL500 Universal Testing Machines | (ID) - Instron 4201 |
| (IK) - Instron 4400 Series | (IM) - Instron 5500 Series |
| (IN) - Instron 3340 series | (KA) - Zwick Model 1425 |
| (LA) - L & W Tensile - Autoline 300 | (LH) - L & W Alwetron TH1 (Horizontal) SE 060 |
| (LI) - L & W Tensile Tester SE 062 | (LX) - L & W (model not specified) |
| (MR) - MTS Alliance RT series | (TA) - Thwing-Albert |
| (TB) - Thwing-Albert EJA/1000 | (TI) - Thwing-Albert QC II |
| (TO) - Thwing-Albert QC-1000 | (TP) - TMI Monitor/Tensile 100 (84-21-01) |
| (VM) - Valmet PaperLab (was Kajaani/Robotest) | (XX) - Instrument make/model not specified by lab |

TAPPI-CTS Interlaboratory Testing Program
Analysis 327
Tensile Energy Absorption - Printing Papers

Grand Mean Sample **SF47** = 78.704 Joules/sq m

Grand Mean Sample **SF48** = 66.091 Joules/sq m

ANALYSIS 327



TAPPI-CTS Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
1Q1DB9		2.686	0.495	2.08	2.463	0.368	1.72	TJ
34XLBH		2.011	-0.180	-0.75	1.975	-0.120	-0.56	TP
4RGZ11		2.062	-0.129	-0.54	1.942	-0.153	-0.71	KA
63HN2N		2.450	0.259	1.09	2.227	0.132	0.62	IM
6CBDX2		2.263	0.073	0.31	2.107	0.012	0.06	ID
6MGVDS		1.881	-0.310	-1.30	1.728	-0.367	-1.71	TB
6PS18N		2.460	0.269	1.13	2.320	0.225	1.05	DL
6VJX3B		2.360	0.169	0.71	2.096	0.001	0.01	XX
73C3WC		1.917	-0.274	-1.15	1.911	-0.184	-0.86	LH
7G221M		2.351	0.161	0.67	2.172	0.077	0.36	IK
8VYZKR		1.950	-0.241	-1.01	1.950	-0.145	-0.68	IM
9L21BA		2.071	-0.120	-0.50	2.064	-0.031	-0.14	LH
9WUKZ9		2.467	0.276	1.16	2.312	0.217	1.01	TO
ARXPQ3		2.034	-0.157	-0.66	2.015	-0.080	-0.37	LH
AYCBHK		2.106	-0.085	-0.36	2.067	-0.028	-0.13	LH
BP793J	*	2.622	0.431	1.81	2.609	0.514	2.40	XX
BWY95K		2.104	-0.087	-0.36	1.978	-0.117	-0.55	LI
DU9GJR		2.284	0.093	0.39	2.018	-0.077	-0.36	TI
E9G6P5		1.783	-0.407	-1.71	1.704	-0.391	-1.83	IN
EHNX6M		2.120	-0.071	-0.30	2.068	-0.027	-0.13	LI
ET9BRJ		2.402	0.211	0.89	2.147	0.052	0.24	IM
F2E58Y		2.105	-0.086	-0.36	2.052	-0.043	-0.20	LX
F2S9F2		1.852	-0.339	-1.42	1.871	-0.224	-1.04	LH
FCC25J		1.972	-0.219	-0.92	1.824	-0.271	-1.26	LH
FGYBJW		2.170	-0.021	-0.09	2.100	0.005	0.02	TF
FLRYWB		1.958	-0.233	-0.98	1.811	-0.284	-1.32	LH
G4RLJ9		2.093	-0.098	-0.41	2.037	-0.058	-0.27	LH
G9B8RE		2.226	0.035	0.15	2.090	-0.005	-0.02	RE
GEDG2N		1.869	-0.322	-1.35	1.808	-0.287	-1.34	TJ
GZPPP8		2.357	0.166	0.70	2.227	0.132	0.62	TX
H349R9		2.177	-0.014	-0.06	2.002	-0.093	-0.44	TB
JT6FSU		2.102	-0.089	-0.37	2.000	-0.095	-0.44	LH
K551YY		2.181	-0.010	-0.04	2.224	0.129	0.60	LA
KMZLJD		2.082	-0.109	-0.46	1.899	-0.196	-0.91	LH
KR9UC3		1.857	-0.334	-1.40	1.864	-0.231	-1.08	LH
KRVZW8		2.252	0.061	0.26	2.303	0.208	0.97	LH
KZCUBX		2.710	0.519	2.18	2.440	0.345	1.61	VM
LE1HSM		1.940	-0.251	-1.05	1.900	-0.195	-0.91	LH
LF4J8K		2.050	-0.141	-0.59	2.037	-0.058	-0.27	LX
LUEB8J		2.500	0.309	1.30	2.300	0.205	0.96	IA
PZX6VD	X	15.091	12.900	54.21	13.953	11.858	55.35	TO
QEUGE4		2.026	-0.165	-0.69	2.007	-0.088	-0.41	LH
QJ4UXP		2.628	0.437	1.84	2.493	0.398	1.86	TB

TAPPI-CTS Interlaboratory Testing Program
Analysis 328
Elongation to Break - Printing Papers

WebCode	Data Flag	Sample SF47			Sample SF48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RGT59R		2.060	-0.131	-0.55	1.970	-0.125	-0.58	LI
RP9NRK		2.250	0.059	0.25	2.100	0.005	0.02	TF
RR7DGS		2.043	-0.148	-0.62	1.809	-0.286	-1.33	TP
SUWWGH		2.448	0.257	1.08	2.383	0.288	1.35	IK
SXZTXR		2.484	0.293	1.23	2.333	0.238	1.11	XX
TAY5QF		2.046	-0.145	-0.61	2.021	-0.074	-0.34	LH
THK2QP	*	2.766	0.575	2.42	2.715	0.620	2.89	VM
TKHGZ8		2.324	0.133	0.56	2.274	0.179	0.84	XX
TXYYDW		2.183	-0.008	-0.03	2.022	-0.073	-0.34	MR
UGRQ89		2.235	0.044	0.19	2.040	-0.055	-0.26	LI
UV8N7H		2.398	0.207	0.87	2.209	0.114	0.53	TB
V7G8SH		2.102	-0.089	-0.37	1.961	-0.134	-0.62	LH
VLFCW9		2.168	-0.023	-0.09	2.055	-0.040	-0.19	XX
WXD1U3		2.540	0.349	1.47	2.550	0.455	2.12	TJ
X71QDE		2.136	-0.054	-0.23	2.090	-0.005	-0.02	ID
XKVFGE		1.963	-0.228	-0.96	2.029	-0.066	-0.31	LH
YG5K3K		2.184	-0.007	-0.03	2.143	0.048	0.23	TB
YP5X7U		1.942	-0.249	-1.04	2.069	-0.026	-0.12	LA
ZYZG32		1.858	-0.333	-1.40	1.851	-0.244	-1.14	LH

		Summary Statistics			
		Sample SF47		Sample SF48	
Grand Means		2.1905	Percent	2.0948	Percent
SD Btwn Labs		0.2380	Percent	0.2142	Percent
Statistics based on 61 of 62 reporting participants					

Comments on assigned Data Flags for Test #328

PZX6VD (X) - Extreme data.

Analysis Notes:

E9G6P5 - One determination removed from the Lab Mean of Sample SF47 per Grubb's Test at 1% risk (TAPPI 1205).

TAPPI-CTS Interlaboratory Testing Program
Analysis 328
Elongation to Break - Printing Papers

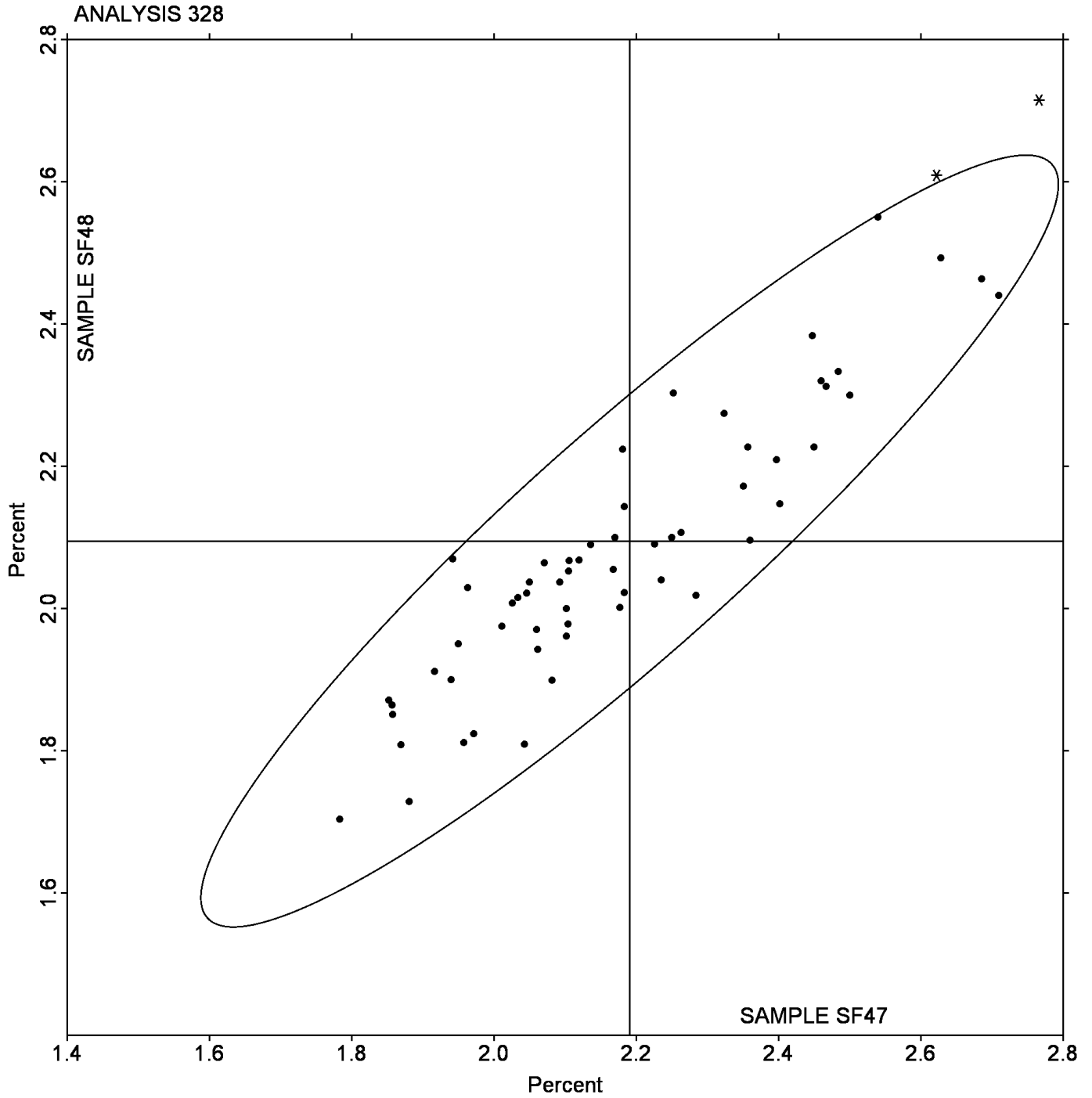
Instrument Code List

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(ID) - Instron 4201	(IK) - Instron 4400 Series
(IM) - Instron 5500	(IN) - Instron 3340 Series
(KA) - Zwick Model 1425	(LA) - L & W Tensile - Autoline 300
(LH) - L & W Alwetron TH1 (Horizontal) SE 060	(LI) - L & W Tensile Tester SE 062
(LX) - L & W (model not specified)	(MR) - MTS Alliance RT series
(RE) - Regmed	(TB) - Thwing-Albert EJA/1000
(TF) - Thwing-Albert EJA Vantage-1	(TI) - Thwing-Albert QC II
(TJ) - Thwing-Albert QC II-XS	(TO) - Thwing-Albert QC-1000
(TP) - TMI Monitor/Tensile 100 (84-21-01)	(TX) - Thwing-Albert (model not specified)
(VM) - Valmet PaperLab (was Kajaani/Robotest)	(XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program
Analysis 328
Elongation to Break - Printing Papers

Grand Mean Sample **SF47** = 2.1905 Percent

Grand Mean Sample **SF48** = 2.0948 Percent



TAPPI-CTS Interlaboratory Testing Program
Analysis 330
Tensile Breaking Strength - Packaging Papers

WebCode	Data Flag	Sample SE47			Sample SE48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2JZDRZ	*	11.77	1.35	2.45	8.642	0.982	2.51	LA
3F7RA4		10.49	0.07	0.12	7.537	-0.122	-0.31	LH
4Q488J	M	11.02	0.60	1.09	No data reported for this sample			TC
57HL2G		10.77	0.34	0.62	7.562	-0.097	-0.25	ID
5W9AY6	X	8.21	-2.22	-4.04	6.032	-1.627	-4.15	IK
668TVL		11.19	0.76	1.39	7.757	0.098	0.25	LH
74CHHK		9.51	-0.92	-1.67	7.383	-0.276	-0.70	TP
83SDZX		10.94	0.52	0.94	8.002	0.342	0.87	LH
8VKE5N		11.43	1.01	1.84	8.284	0.625	1.59	TB
9T7SZZ		10.83	0.41	0.75	8.049	0.390	0.99	LH
9VJMMS		10.68	0.26	0.47	7.751	0.092	0.24	LH
A6GWVM		9.90	-0.52	-0.94	7.286	-0.373	-0.95	XX
BAPFKE		10.55	0.13	0.23	7.711	0.052	0.13	XX
BFY9FH		9.88	-0.54	-0.99	6.983	-0.676	-1.72	IF
BGU7VX		9.48	-0.94	-1.71	6.876	-0.783	-2.00	SA
C3LT6K		10.91	0.49	0.88	8.282	0.623	1.59	TK
C68V4X		10.16	-0.26	-0.47	7.688	0.029	0.07	LW
D2GDS5		10.05	-0.37	-0.67	7.436	-0.223	-0.57	IX
E7RT79		9.93	-0.50	-0.91	7.582	-0.078	-0.20	ZU
EXRJ3P		10.01	-0.42	-0.76	7.177	-0.483	-1.23	IN
FRU4C9		10.17	-0.25	-0.46	7.795	0.136	0.35	TB
FSSJ9L		10.62	0.20	0.36	7.837	0.178	0.45	TK
G9ABKQ		10.83	0.41	0.74	7.688	0.029	0.07	IM
HLVEXE		10.35	-0.07	-0.14	7.749	0.090	0.23	TO
JGGJTG		10.26	-0.16	-0.29	7.460	-0.199	-0.51	TB
KGEpra		9.52	-0.91	-1.65	6.997	-0.663	-1.69	SB
KSXPFX		10.69	0.27	0.49	7.655	-0.004	-0.01	XX
L5K574		11.15	0.73	1.32	7.644	-0.015	-0.04	TO
LCFYA4		10.24	-0.19	-0.34	7.625	-0.034	-0.09	TO
LERCS5		10.39	-0.03	-0.06	7.936	0.276	0.70	TP
N665VK		10.62	0.20	0.36	7.893	0.234	0.60	TA
NCQ21U		11.07	0.64	1.17	8.213	0.554	1.41	TO
PF74KQ		10.01	-0.42	-0.76	7.209	-0.450	-1.15	TE
RBNRYT		10.16	-0.27	-0.48	7.294	-0.365	-0.93	LW
RZL7SN		9.89	-0.54	-0.98	7.313	-0.347	-0.88	IK
S6KLZP		10.43	0.01	0.02	8.100	0.441	1.12	SP
TRV1K1		10.23	-0.19	-0.35	7.620	-0.039	-0.10	ID
U4VD1J		10.37	-0.06	-0.10	7.749	0.090	0.23	TE
UKN2JU		9.40	-1.02	-1.86	7.259	-0.400	-1.02	IA
X47E6N		11.27	0.84	1.53	8.369	0.710	1.81	TO
XMVJ2W		10.27	-0.15	-0.27	7.525	-0.134	-0.34	LH
Z7693V		10.52	0.09	0.17	7.450	-0.209	-0.53	IM

TAPPI-CTS Interlaboratory Testing Program
Analysis 330
Tensile Breaking Strength - Packaging Papers

	Summary Statistics	
	Sample SE47	Sample SE48
Grand Means	10.423 kN/m	7.6592 kN/m
SD Btwn Labs	0.550 kN/m	0.3921 kN/m
Statistics based on 40 of 42 reporting participants		

Comments on assigned Data Flags for Test #330

4Q488J (M) - No data for Sample SE48.

5W9AY6 (X) - Systematic error (data for both samples are low).

Analysis Notes:

2JZDRZ - Data appear to be reported as lb/inch, not kN/m as indicated on datasheet. Units changed by CTS.

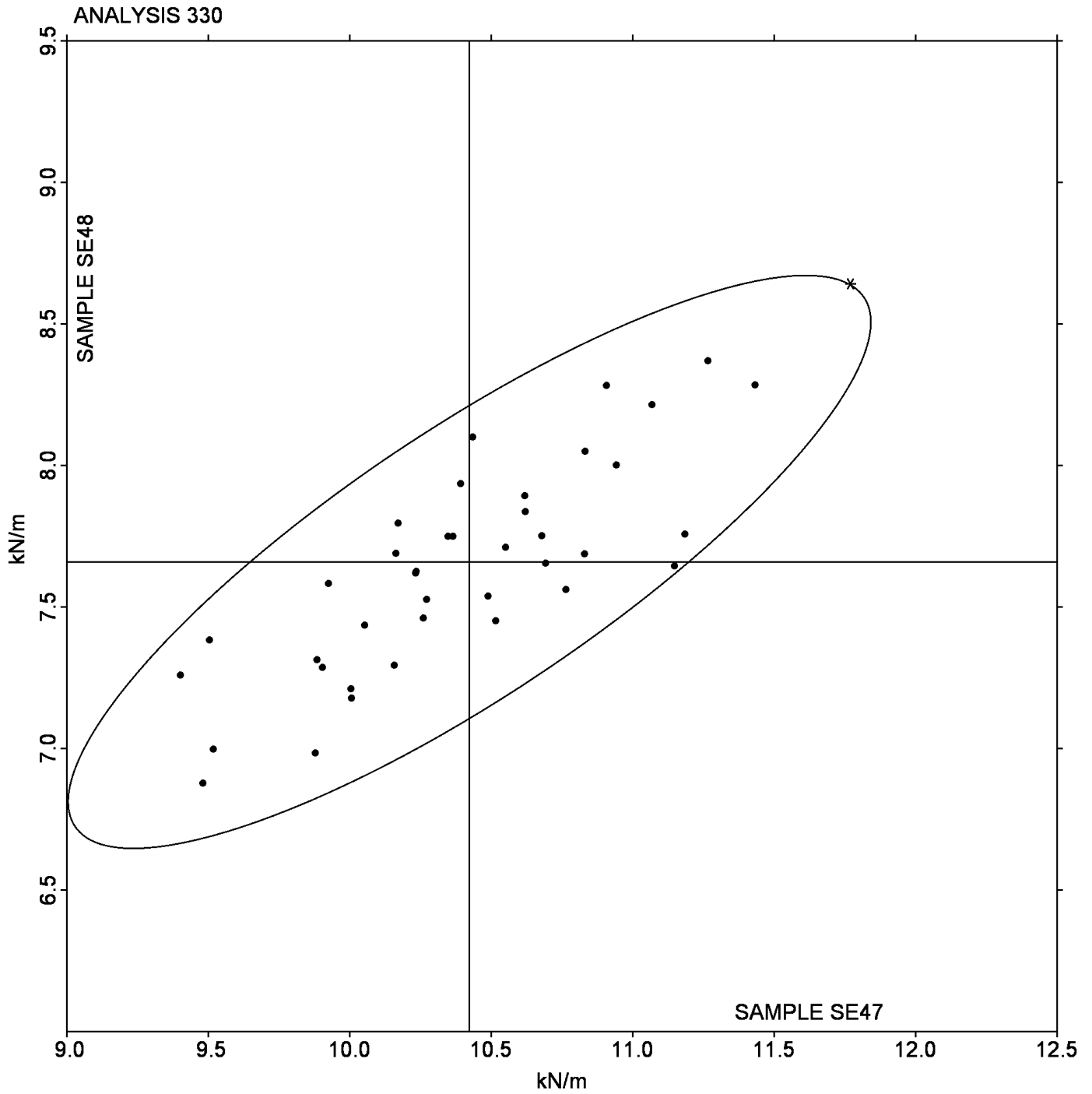
Instrument Code List

- | | |
|--|--|
| (IA) - Instron 1011
(IF) - Instron 3340 Series
(IM) - Instron 5500 Series
(IX) - Instron (model not specified)
(LH) - L & W Alwetron TH1 (Horizontal) SE 060
(SA) - Shimadzu Autograph AG 2000 A
(SP) - Schopper Type Tensile Tester (TMI)
(TB) - Thwing-Albert EJA/1000
(TE) - Thwing-Albert Intelect II
(TO) - Thwing-Albert QC-1000
(XX) - Instrument make/model not specified by lab | (ID) - Instron 4201
(IK) - Instron 4400 Series
(IN) - Instron 3360 Series
(LA) - L & W Autoline 300
(LW) - L & W Tensile Tester SE062
(SB) - Shimadzu Autograph DSS 500
(TA) - Thwing-Albert Tensile Tester
(TC) - Thwing-Albert Electro-Hydraulic, Model 30LT
(TK) - Thwing-Albert Model 37-4
(TP) - TMI Monitor/Tensile 100 (84-21-01)
(ZU) - Zwick Universal Tensile Tester |
|--|--|

TAPPI-CTS Interlaboratory Testing Program
Analysis 330
Tensile Breaking Strength - Packaging Papers

Grand Mean Sample **SE47** = 10.423 kN/m

Grand Mean Sample **SE48** = 7.6592 kN/m



TAPPI-CTS Interlaboratory Testing Program
Analysis 331
Tensile Energy Absorption - Packaging Papers

WebCode	Data Flag	Sample SE47			Sample SE48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
1HLLVJ		158.4	14.7	1.09	117.8	12.5	1.20	TO
4KHWAQ		127.6	-16.0	-1.18	90.2	-15.1	-1.45	IF
6YQK7P		160.3	16.6	1.22	124.3	19.0	1.83	TB
7PFFUY		158.4	14.7	1.09	104.4	-0.9	-0.09	IM
8PF32G		131.1	-12.5	-0.92	100.4	-4.9	-0.47	XX
9FJQG7		135.3	-8.4	-0.62	103.0	-2.3	-0.22	XX
9MMSM8		135.3	-8.3	-0.61	94.2	-11.1	-1.07	SA
9W9BPE		134.9	-8.7	-0.64	106.0	0.7	0.07	IA
B3SKWG		133.5	-10.1	-0.74	103.0	-2.3	-0.22	LH
C2S3Z5		141.7	-2.0	-0.14	111.6	6.3	0.61	LH
ELPZ5B		122.3	-21.3	-1.57	102.4	-2.9	-0.28	TP
F1N3EG		151.9	8.3	0.61	115.0	9.7	0.93	TO
G1XDLK		161.6	17.9	1.32	119.9	14.6	1.40	LA
GERB2W	*	183.1	39.5	2.91	125.3	20.0	1.93	IK
GEVLG1		143.8	0.2	0.01	94.6	-10.7	-1.04	IX
H6BB4R		131.2	-12.4	-0.92	100.5	-4.8	-0.46	LW
HJUSGA		141.9	-1.7	-0.13	106.1	0.8	0.08	LW
L8M2LC		152.7	9.0	0.66	123.0	17.7	1.71	TO
MFV73V		152.9	9.3	0.69	104.8	-0.5	-0.05	XX
RFFN8Z		140.7	-2.9	-0.22	94.2	-11.1	-1.07	LH
SK1BNA		137.0	-6.6	-0.49	94.9	-10.4	-1.01	IN
SNBHSW		128.4	-15.2	-1.12	98.2	-7.1	-0.69	TE
UTEFN1		133.9	-9.8	-0.72	91.8	-13.5	-1.30	SB
W3QAC3		140.9	-2.7	-0.20	101.9	-3.4	-0.33	TB
WLYXKY		145.3	1.7	0.12	98.1	-7.2	-0.70	IM
YBYU1E		150.3	6.7	0.49	112.4	7.1	0.68	TE
Z97MFM	M	No data reported for this sample			144.1	38.8	3.75	XX

Sample		Summary Statistics	Sample SE48
Grand Means	143.63 Joules/sq m		105.31 Joules/sq m
SD Btwn Labs	13.58 Joules/sq m		10.37 Joules/sq m
Statistics based on 26 of 27 reporting participants			

Comments on assigned Data Flags for Test #331

Z97MFM (M) - No data for Sample SE47 and data for Sample SE48 are high.

TAPPI-CTS Interlaboratory Testing Program
Analysis 331
Tensile Energy Absorption - Packaging Papers

Instrument Code List

(IA) - Instron 1011	(IF) - Instron 3340 Series
(IK) - Instron 4400 Series	(IM) - Instron 5500 Series
(IN) - Instron 3360 Series	(IX) - Instron (model not specified)
(LA) - L & W Autoline 300	(LH) - L & W Alwetron TH1 (Horizontal) SE 060
(LW) - L & W Tensile Tester SE062	(SA) - Shimadzu Autograph AG 2000 A
(SB) - Shimadzu Autograph DSS 500	(TB) - Thwing-Albert EJA/1000
(TE) - Thwing-Albert Intelect II	(TO) - Thwing-Albert QC-1000
(TP) - TMI Monitor/Tensile 100 (84-21-01)	(XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program
Analysis 332
Elongation to Break - Packaging Papers

WebCode	Data Flag	Sample SE47			Sample SE48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
21B8PM		1.996	-0.118	-0.69	2.019	-0.039	-0.22	TE
2DXL1W	*	2.490	0.376	2.19	2.577	0.519	2.89	TO
2W12K1		2.161	0.047	0.27	2.007	-0.051	-0.29	IN
38JU22		2.343	0.229	1.34	2.081	0.023	0.13	IM
3B8PXN		1.883	-0.231	-1.35	1.896	-0.162	-0.90	XX
4U3MTN		2.088	-0.026	-0.15	2.120	0.062	0.34	LW
61U4EK		2.378	0.264	1.54	2.389	0.331	1.84	TP
6FQ2AT		2.078	-0.036	-0.21	1.996	-0.062	-0.35	TB
7NYKX5		2.250	0.136	0.79	2.160	0.102	0.57	TE
98QKP6		1.914	-0.200	-1.17	1.947	-0.111	-0.62	XX
9YHWYE	X	0.188	-1.926	-11.24	0.180	-1.878	-10.46	TO
B744NG		2.021	-0.094	-0.55	1.967	-0.092	-0.51	IF
CV2BC4		2.100	-0.014	-0.08	1.900	-0.158	-0.88	XX
CYUQ9Z	X	2.864	0.750	4.37	2.558	0.500	2.78	IK
DJ9GZE		2.393	0.279	1.63	2.206	0.148	0.82	IM
DR4NA8	M	No data reported for this sample			1.929	-0.129	-0.72	XX
EYWND8	X	2.800	0.686	4.00	3.000	0.942	5.25	ZU
FH1RJ2		2.152	0.038	0.22	1.986	-0.072	-0.40	IX
H7CG47		1.977	-0.137	-0.80	1.979	-0.079	-0.44	TB
L39T78		2.061	-0.053	-0.31	1.852	-0.206	-1.15	SB
LAGK36		1.930	-0.184	-1.07	1.970	-0.088	-0.49	LH
N4KTFT		2.236	0.122	0.71	2.138	0.080	0.44	SA
NWUUG8		2.004	-0.110	-0.64	1.906	-0.152	-0.85	XX
PS6ZMS		1.966	-0.148	-0.86	2.011	-0.047	-0.26	XX
QNNQZT		1.920	-0.194	-1.13	1.900	-0.158	-0.88	LW
TH2WRZ		1.985	-0.129	-0.75	2.041	-0.017	-0.10	XX
UBTWRT		2.133	0.019	0.11	2.050	-0.008	-0.05	IA
VPJ47V		1.874	-0.240	-1.40	1.742	-0.316	-1.76	LH
XDWPGX		2.310	0.196	1.14	2.357	0.299	1.66	TB
XYYMU Y		2.346	0.232	1.35	2.324	0.266	1.48	TO
ZLRSXK		2.236	0.122	0.71	2.178	0.120	0.67	TO
ZMLLGA		2.100	-0.014	-0.08	2.049	-0.009	-0.05	LH
ZNQXN5		1.986	-0.128	-0.75	1.940	-0.118	-0.66	LA

Sample SE47		Summary Statistics	Sample SE48	
Grand Means	2.1142 Percent		2.0582	Percent
SD Btw Labs	0.1713 Percent		0.1795	Percent
Statistics based on 29 of 33 reporting participants				

TAPPI-CTS Interlaboratory Testing Program
Analysis 332
Elongation to Break - Packaging Papers

Comments on assigned Data Flags for Test #332

9YHWYE (X) - Extreme data.

CYUQ9Z (X) - Systematic error (data for both samples are high).

DR4NA8 (M) - No data for Sample SE47.

EYWND8 (X) - Extreme data.

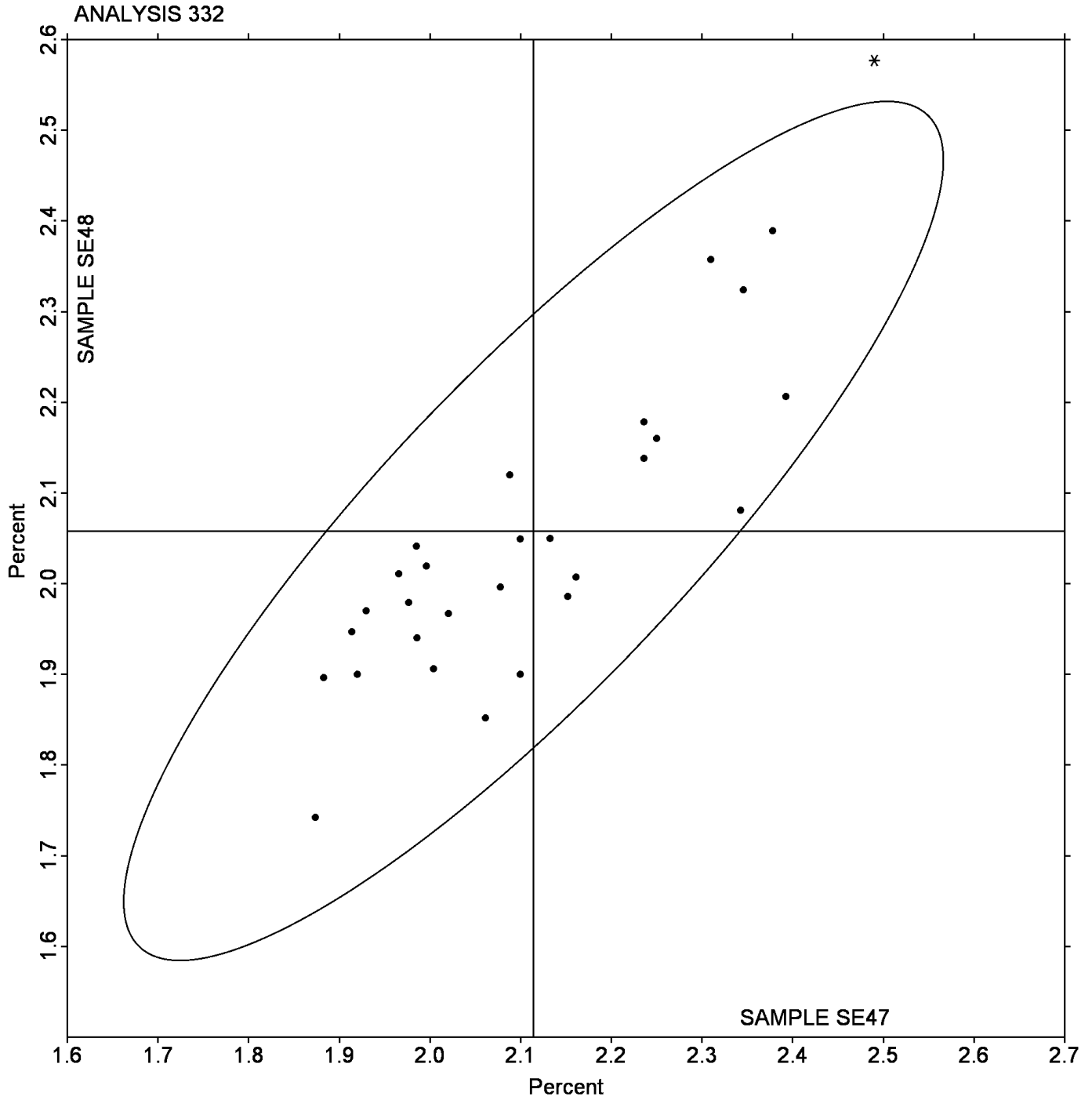
Instrument Code List

(IA) - Instron 1011	(IF) - Instron 3340 Series
(IK) - Instron 4400 Series	(IM) - Instron 5500 Series
(IN) - Instron 3360 Series	(IX) - Instron (model not specified)
(LA) - L & W Autoline 300	(LH) - L & W Alwetron TH1 (Horizontal) SE 060
(LW) - L & W Tensile Tester SE062	(SA) - Shimadzu Autograph AG 2000 A
(SB) - Shimadzu Autograph DSS 500	(TB) - Thwing-Albert EJA/1000
(TE) - Thwing-Albert Intellect II	(TO) - Thwing-Albert QC-1000
(TP) - TMI Monitor/Tensile 100 (84-21-01)	(XX) - Instrument make/model not specified by lab
(ZU) - Zwick Universal Tensile Tester	

TAPPI-CTS Interlaboratory Testing Program
Analysis 332
Elongation to Break - Packaging Papers

Grand Mean Sample **SE47** = 2.1142 Percent

Grand Mean Sample **SE48** = 2.0582 Percent



TAPPI-CTS Interlaboratory Testing Program
Analysis 334
Folding Endurance (MIT) - Double Folds

WebCode	Data Flag	Sample SG47			Sample SG48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
15FGTY		40.70	-23.88	-2.03	49.10	-19.08	-1.77	MT
2DEASA		54.60	-9.98	-0.85	70.00	1.82	0.17	MT
2ML29S		73.40	8.82	0.75	78.10	9.92	0.92	MT
31W482		66.10	1.52	0.13	79.60	11.42	1.06	MT
5Q18YP		54.00	-10.58	-0.90	51.20	-16.98	-1.57	MT
5SG1AR		74.40	9.82	0.83	74.60	6.42	0.59	MT
6MGQ8T		66.90	2.32	0.20	55.90	-12.28	-1.14	MT
6QB716		65.10	0.52	0.04	72.90	4.72	0.44	MT
7BDDJN		76.50	11.92	1.01	83.40	15.22	1.41	MT
7RTP34		61.20	-3.38	-0.29	69.60	1.42	0.13	MT
7UJLBW		60.30	-4.28	-0.36	85.30	17.12	1.58	MT
9QH7PJ	X	523.40	458.82	39.01	532.30	464.12	42.95	MT
AHQHXS		77.20	12.62	1.07	68.70	0.52	0.05	MT
CAFGJW		65.00	0.42	0.04	60.20	-7.98	-0.74	MT
GVUUR7		80.30	15.72	1.34	68.40	0.22	0.02	XX
K2SB5A		66.80	2.22	0.19	68.20	0.02	0.00	MT
KRH4TP		46.20	-18.38	-1.56	58.50	-9.68	-0.90	MT
Q1QA37		82.00	17.42	1.48	76.70	8.52	0.79	MT
VUL8NT		51.80	-12.78	-1.09	56.80	-11.38	-1.05	XX

		Summary Statistics	
	Sample SG47		Sample SG48
Grand Means	64.583 Double Folds		68.178 Double Folds
SD Btwn Labs	11.762 Double Folds		10.807 Double Folds
Statistics based on 18 of 19 reporting participants			

Comments on assigned Data Flags for Test #334

9QH7PJ (X) - Extreme data.

Instrument Code List

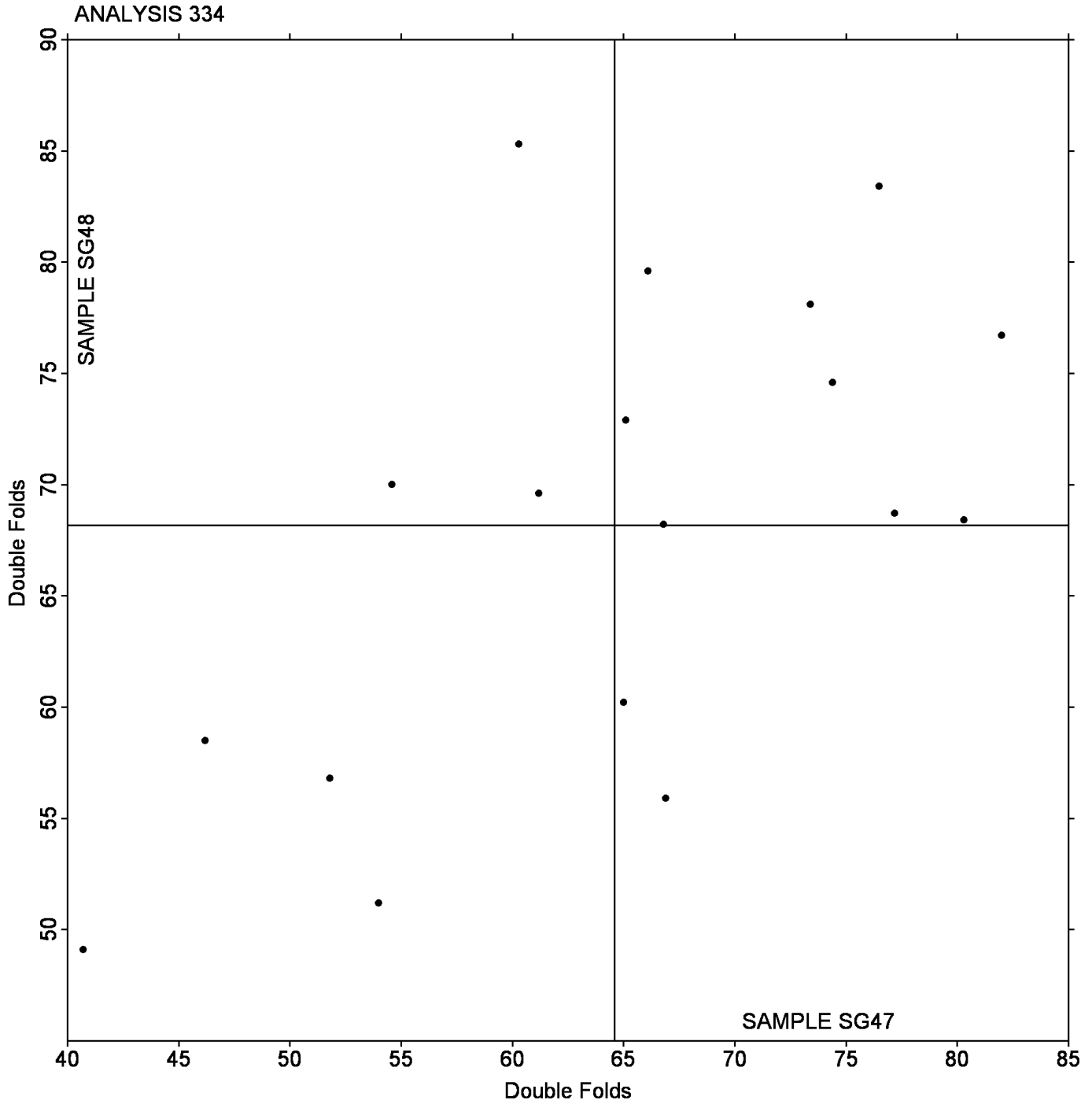
(MT) - MIT - Tinius Olsen

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

TAPPI-CTS Interlaboratory Testing Program
Analysis 334
Folding Endurance (MIT) - Double Folds

Grand Mean Sample **SG47** = 64.583 Double Folds

Grand Mean Sample **SG48** = 68.178 Double Folds



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 336
Bending Resistance, Gurley Type

WebCode	Data Flag	Sample SH47			Sample SH48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
17HJC8		256.9	2.0	0.09	138.2	-3.7	-0.33
29P43T		256.2	1.2	0.06	132.5	-9.4	-0.84
46LZLJ		245.4	-9.6	-0.44	141.1	-0.8	-0.07
5JXB7D		267.1	12.2	0.56	151.6	9.7	0.87
6K783M		248.4	-6.5	-0.30	138.8	-3.1	-0.28
6PCSJM		255.1	0.1	0.01	140.1	-1.8	-0.16
6RFC7U		258.6	3.7	0.17	156.6	14.7	1.32
7YG2QB		244.0	-10.9	-0.50	142.2	0.3	0.03
8JPMFV		236.5	-18.5	-0.85	143.9	2.0	0.18
9GF7QP		274.1	19.2	0.88	150.4	8.5	0.76
B32FKM		250.0	-5.0	-0.23	128.3	-13.6	-1.22
C3WDDE		250.7	-4.3	-0.20	142.2	0.3	0.03
FNUN8T		279.1	24.2	1.11	159.4	17.5	1.57
FZACFW		271.1	16.1	0.74	144.3	2.4	0.21
G2NCKW	*	312.6	57.6	2.65	168.7	26.8	2.41
G8THHU		276.3	21.4	0.98	149.0	7.1	0.64
GYFGKU		268.2	13.2	0.61	146.5	4.6	0.41
HE52M1		271.6	16.6	0.76	143.4	1.5	0.14
HEYD4F		263.9	8.9	0.41	149.6	7.7	0.69
LL8V16	X	264.7	9.7	0.45	187.6	45.7	4.10
MA6QR5		211.6	-43.4	-2.00	116.3	-25.6	-2.29
MUJHGB		230.2	-24.7	-1.14	124.5	-17.4	-1.56
MW7UFG	X	127.1	-127.8	-5.88	52.9	-89.0	-7.98
UZFNX9		249.8	-5.2	-0.24	135.9	-6.0	-0.54
X25D6R		270.4	15.4	0.71	141.6	-0.3	-0.02
X6HGU7	X	950.1	695.1	31.99	551.7	409.8	36.75
XTBCL6		259.6	4.6	0.21	138.3	-3.6	-0.32
XUKVTV		240.0	-14.9	-0.69	144.5	2.6	0.23
YQ1Z8X		229.3	-25.7	-1.18	140.5	-1.4	-0.13
Z3GA1S		207.1	-47.8	-2.20	122.8	-19.1	-1.72

	Sample SH47	Summary Statistics	Sample SH48
Grand Means	254.96 Gurley Units		141.89 Gurley Units
SD Btw Labs	21.73 Gurley Units		11.15 Gurley Units
Statistics based on 27 of 30 reporting participants			

Comments on assigned Data Flags for Test #336

LL8V16 (X) - Inconsistent in testing between samples and within the determinations for Sample SH48.

MW7UFG (X) - Extreme data.

X6HGU7 (X) - Extreme data.

TAPPI-CTS Interlaboratory Testing Program
Analysis 336
Bending Resistance, Gurley Type

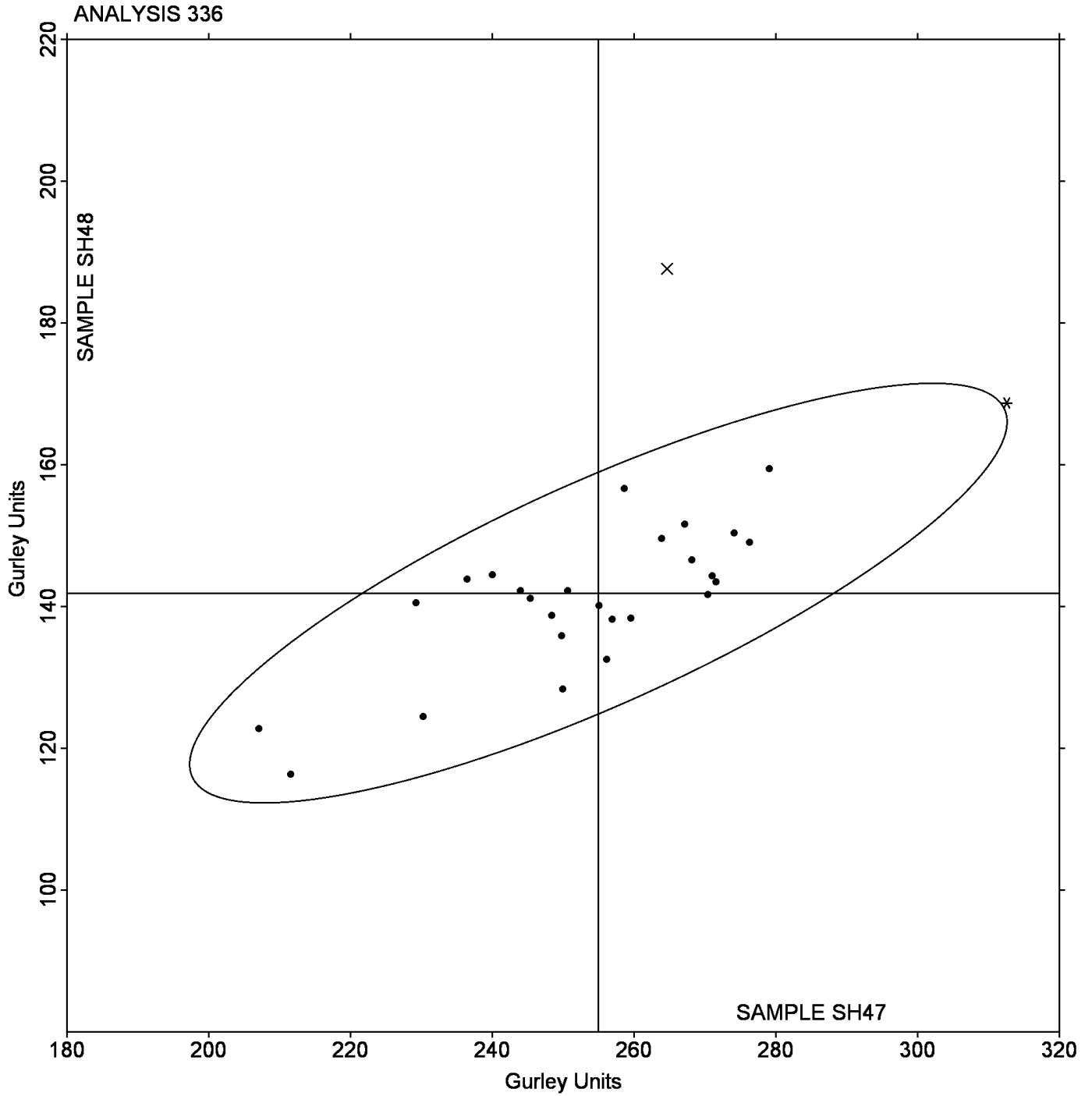
Analysis Notes:

6RFC7U - One determination removed from the Lab Mean of Sample SH48 per Grubb's Test at 1% risk (TAPPI 1205).

TAPPI-CTS Interlaboratory Testing Program
Analysis 336
Bending Resistance, Gurley Type

Grand Mean Sample **SH47** = 254.96 Gurley Units

Grand Mean Sample **SH48** = 141.89 Gurley Units



TAPPI-CTS Interlaboratory Testing Program
Analysis 338
Bending Resistance, Taber Type - 0 to 10 Units

WebCode	Data Flag	Sample SJ47			Sample SJ48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DV7K9		3.742	0.040	0.11	2.199	0.040	0.14
3J2BU8		3.971	0.269	0.75	2.262	0.103	0.36
7ADDBH		3.870	0.168	0.47	2.380	0.221	0.78
7M47J5		3.955	0.253	0.70	2.430	0.271	0.95
A3NG27		3.690	-0.012	-0.03	2.000	-0.159	-0.56
A66K1Q		4.176	0.474	1.31	2.390	0.231	0.81
AC91GH		3.625	-0.077	-0.21	2.183	0.024	0.08
B1DZAE		3.550	-0.152	-0.42	2.000	-0.159	-0.56
CAMLH7		4.217	0.515	1.43	2.461	0.302	1.06
D49PTR	X	1.480	-2.222	-6.15	0.830	-1.329	-4.67
F2NLP4	*	4.461	0.759	2.10	2.959	0.800	2.81
G3TU91		3.450	-0.252	-0.70	1.960	-0.199	-0.70
H8F4W4		3.381	-0.321	-0.89	1.822	-0.337	-1.19
J8A6YD		3.030	-0.672	-1.86	1.783	-0.376	-1.32
JBUN9R		3.335	-0.367	-1.01	2.081	-0.078	-0.28
NQB1QN		3.692	-0.010	-0.03	2.003	-0.157	-0.55
SMPNMG		3.302	-0.400	-1.11	1.905	-0.254	-0.89
SRJJ3U		3.382	-0.320	-0.88	1.939	-0.220	-0.77
XDM6ZK		3.565	-0.137	-0.38	1.982	-0.177	-0.62
XMFLP1	X	3.320	-0.382	-1.06	2.511	0.352	1.24
Y4WMCY		3.937	0.235	0.65	2.287	0.128	0.45

Sample SJ47		Summary Statistics	Sample SJ48	
Grand Means	3.7016 Taber Units		2.1592 Taber Units	
SD Btwn Labs	0.3613 Taber Units		0.2844 Taber Units	
Statistics based on 19 of 21 reporting participants				

Comments on assigned Data Flags for Test #338

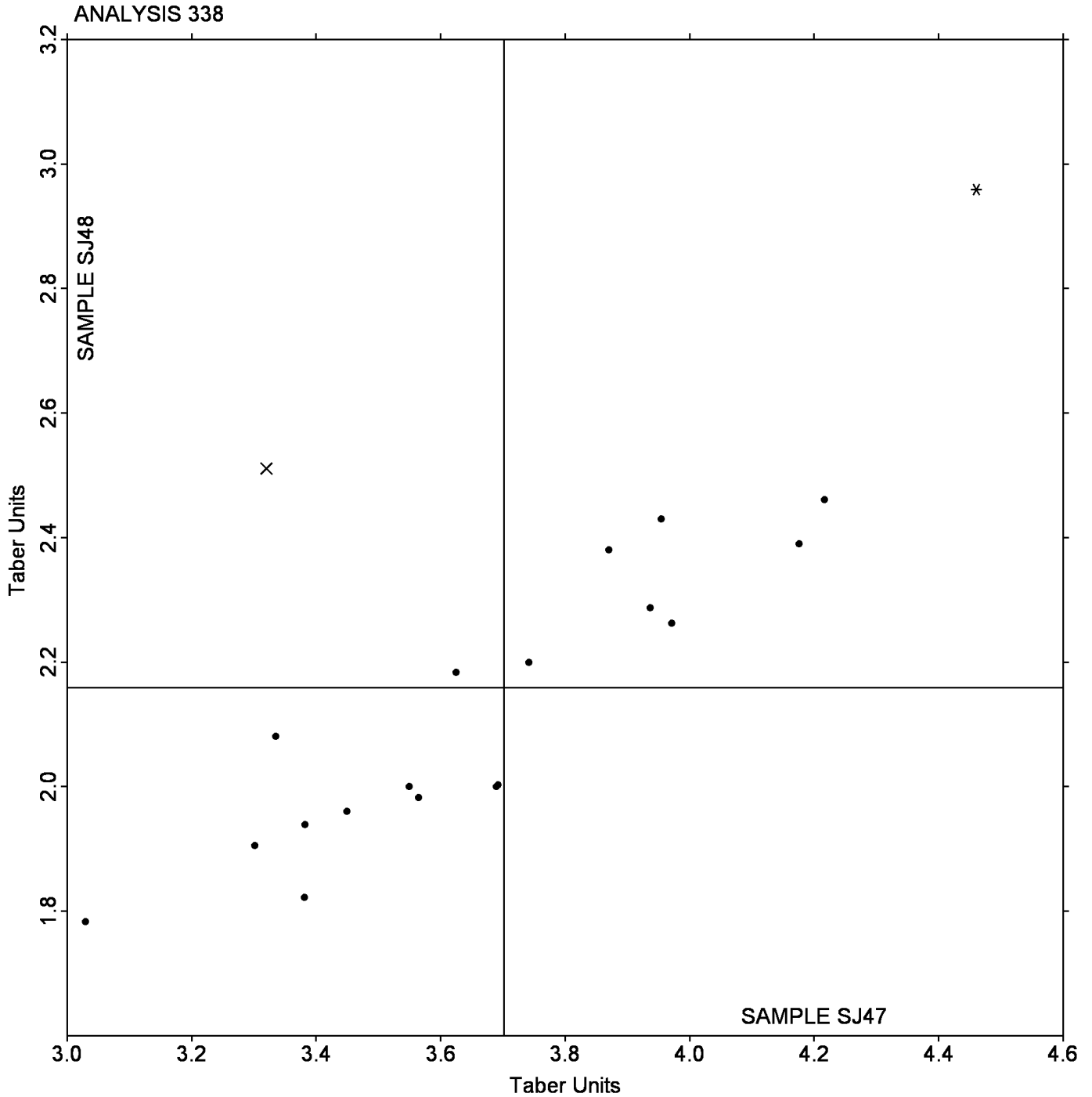
D49PTR (X) - Extreme data.

XMFLP1 (X) - Inconsistent in testing between samples.

TAPPI-CTS Interlaboratory Testing Program
Analysis 338
Bending Resistance, Taber Type - 0 to 10 Units

Grand Mean Sample **SJ47** = 3.7016 Taber Units

Grand Mean Sample **SJ48** = 2.1592 Taber Units



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 339
Bending Resistance, Taber Type - 10 to 100 Taber Units

WebCode	Data Flag	Sample SQ47			Sample SQ48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
5UE66B		32.95	-1.89	-1.25	27.15	-0.50	-0.57
7S4SU4		35.81	0.97	0.64	27.42	-0.23	-0.26
9268XK		33.54	-1.30	-0.86	26.93	-0.72	-0.82
APTHGU		38.55	3.71	2.46	28.79	1.14	1.29
BLCEG4		34.15	-0.69	-0.46	27.61	-0.04	-0.05
LHQABA		35.05	0.21	0.14	27.75	0.10	0.11
MAASPV	X	61.00	26.16	17.36	61.50	33.85	38.35
Q73FFK		33.78	-1.06	-0.71	27.33	-0.32	-0.36
QA73A2		35.52	0.68	0.45	29.26	1.61	1.82
WYWNP4		34.35	-0.49	-0.32	26.70	-0.95	-1.08
XQA855		35.20	0.36	0.24	26.60	-1.05	-1.19
YM2LNT		34.33	-0.51	-0.34	28.63	0.98	1.11

		Summary Statistics			
		Sample SQ47		Sample SQ48	
Grand Means		34.839 Taber Units		27.652 Taber Units	
SD Btwn Labs		1.507 Taber Units		0.883 Taber Units	
Statistics based on 11 of 12 reporting participants					

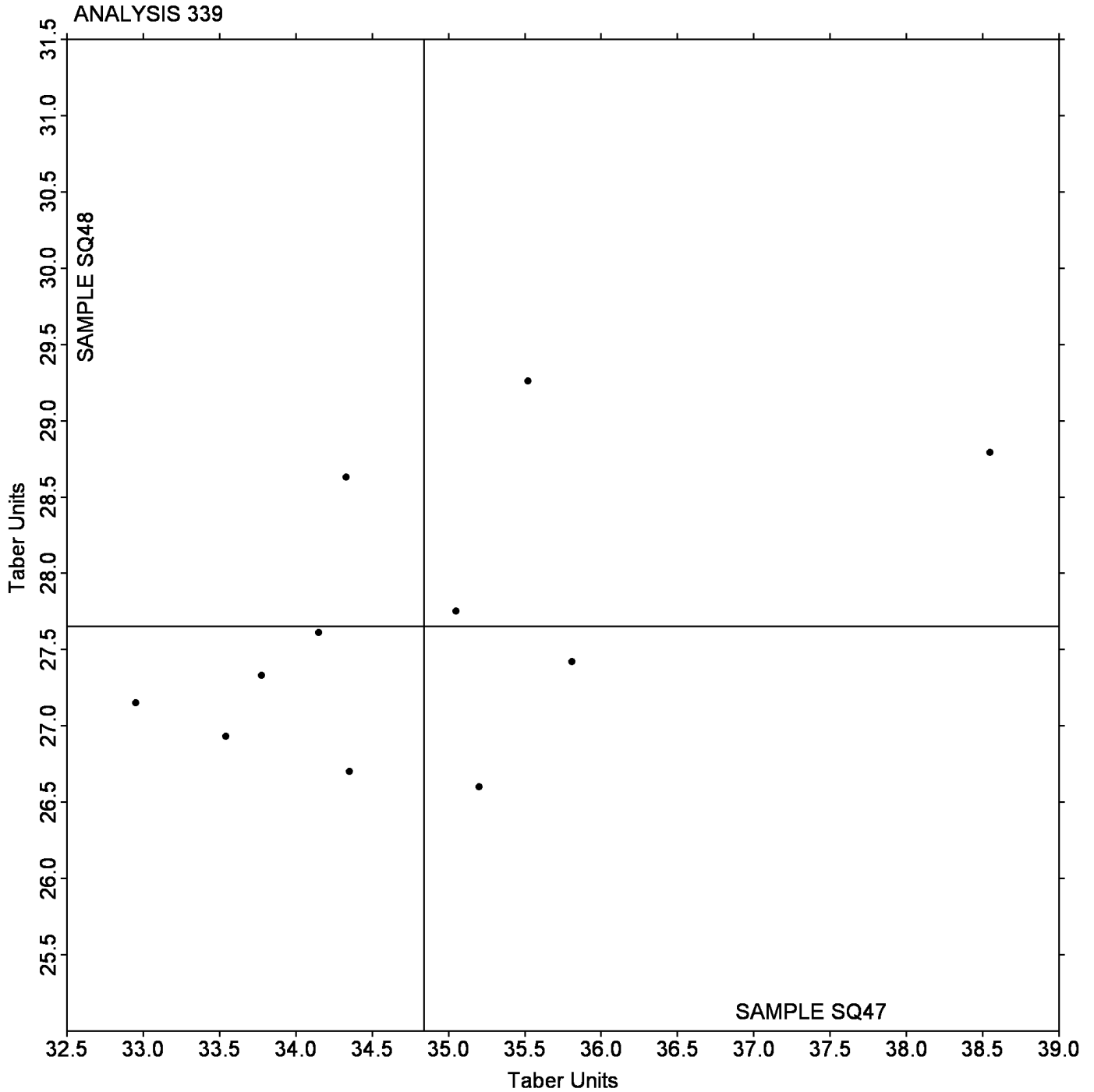
Comments on assigned Data Flags for Test #339

MAASPV (X) - Extreme data.

TAPPI-CTS Interlaboratory Testing Program
Analysis 339
Bending Resistance, Taber Type - 10 to 100 Taber Units

Grand Mean Sample **SQ47** = 34.839 Taber Units

Grand Mean Sample **SQ48** = 27.652 Taber Units



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 340

Bending Resistance, Taber Type - 50 to 500 Taber Units - Recycled Paperboard

WebCode	Data Flag	Sample ST47			Sample ST48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KXHMN		198.5	-10.6	-1.18	198.6	-10.6	-1.16
6X6VTA		206.1	-3.1	-0.34	205.7	-3.6	-0.39
AN36W3		206.9	-2.3	-0.25	206.1	-3.1	-0.34
E76DLR		208.5	-0.7	-0.07	210.8	1.5	0.17
GP2DV2		210.9	1.7	0.19	217.2	8.0	0.87
HZ7UPY		210.7	1.5	0.17	216.0	6.8	0.74
JBC71W		205.3	-3.9	-0.43	202.8	-6.5	-0.71
K17CEK	*	225.3	16.1	1.79	213.6	4.4	0.48
K5SWKU		191.1	-18.1	-2.00	188.5	-20.7	-2.27
KJ4GXS		204.4	-4.8	-0.53	203.9	-5.3	-0.58
LE26GC		210.3	1.1	0.12	212.6	3.3	0.37
SDEN21		214.1	4.9	0.55	214.0	4.7	0.52
SERR4K	X	42.0	-167.2	-18.55	43.0	-166.3	-18.21
SX65G8		214.9	5.7	0.64	216.8	7.6	0.83
W8HTTN		215.8	6.6	0.74	215.7	6.5	0.71
WGB2DD		225.0	15.8	1.76	225.5	16.3	1.78
WWF3FV		212.3	3.1	0.34	212.5	3.3	0.36
YA9TNH		195.8	-13.3	-1.48	196.6	-12.7	-1.39

		Summary Statistics	
	Sample ST47		Sample ST48
Grand Means	209.16 Taber Units		209.21 Taber Units
SD Btwn Labs	9.01 Taber Units		9.13 Taber Units
Statistics based on 17 of 18 reporting participants			

Comments on assigned Data Flags for Test #340

SERR4K (X) - Extreme data.

Analysis Notes:

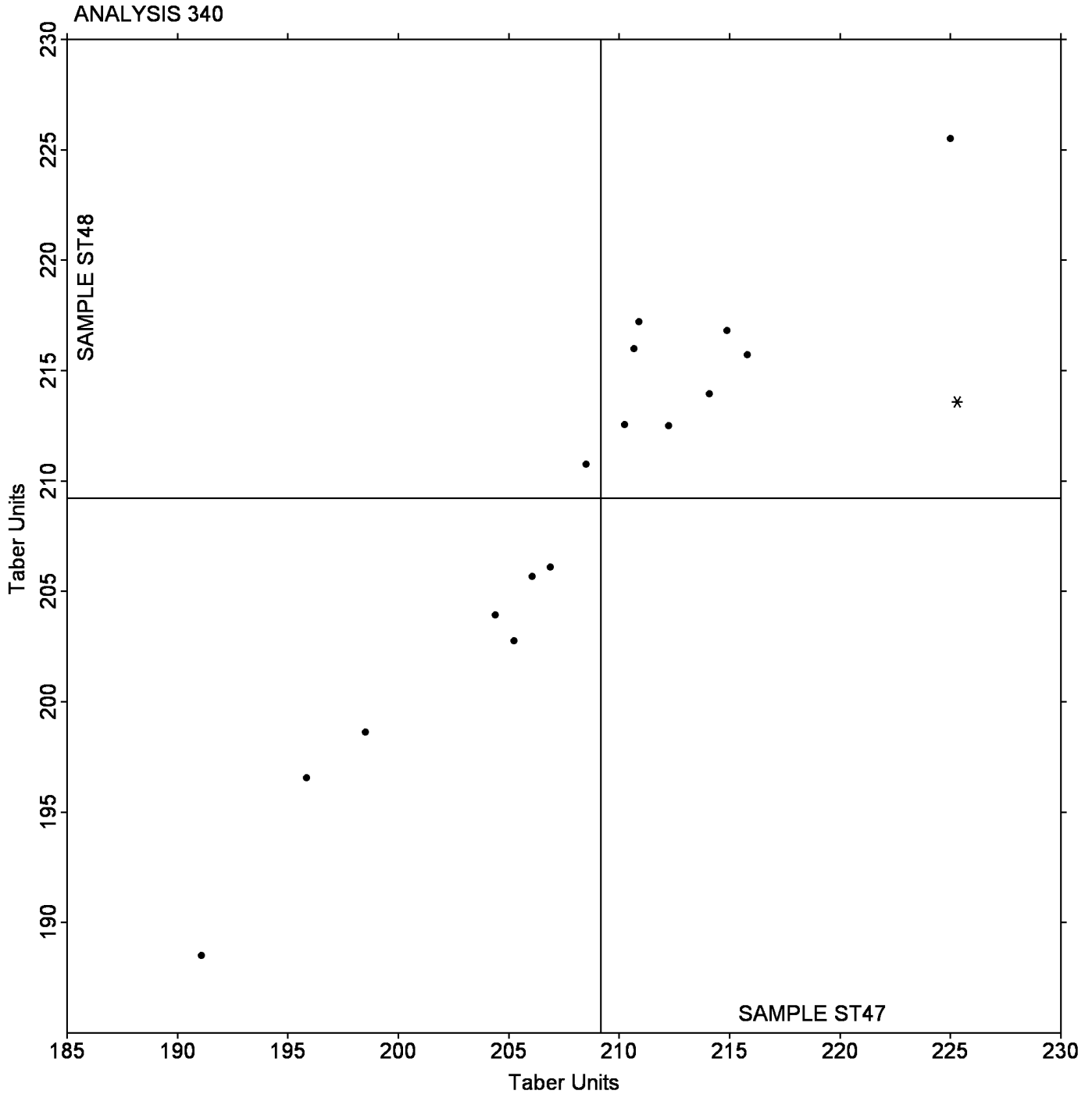
K17CEK - Data appear to be reported as mN-m, not g-cm as indicated on datasheet. Units changed by CTS.

TAPPI-CTS Interlaboratory Testing Program Analysis 340

Bending Resistance, Taber Type - 50 to 500 Taber Units - Recycled Paperboard

Grand Mean Sample **ST47** = 209.16 Taber Units

Grand Mean Sample **ST48** = 209.21 Taber Units



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 343
Z-Direction Tensile

WebCode	Data Flag	Sample SM47			Sample SM48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3H991D		51.00	-9.79	-1.35	58.31	-24.69	-1.69	TZ
3NE3V9		72.54	11.75	1.62	103.60	20.59	1.41	CD
626X45		52.07	-8.72	-1.20	69.07	-13.94	-0.95	LW
8E4QJ7		60.73	-0.06	-0.01	82.57	-0.44	-0.03	TZ
AKDUWX		66.74	5.95	0.82	96.84	13.83	0.95	XX
BEMXTS		64.60	3.81	0.53	88.80	5.79	0.40	CA
D4ZJ3V		62.68	1.89	0.26	88.12	5.11	0.35	TA
DSLQ9T		64.94	4.15	0.57	89.22	6.21	0.43	TL
E7S1NZ		67.56	6.77	0.93	100.76	17.75	1.21	CD
J9EEXS		69.78	8.99	1.24	100.46	17.45	1.19	CD
JERQ58		59.77	-1.02	-0.14	80.41	-2.59	-0.18	TZ
JXELTN		62.14	1.35	0.19	83.08	0.07	0.01	XX
L3FUFM	*	52.36	-8.43	-1.16	82.50	-0.51	-0.03	TZ
M3TECP		63.60	2.81	0.39	78.60	-4.41	-0.30	CA
PRV2LG		67.25	6.46	0.89	97.03	14.02	0.96	TA
SNY3QA		55.04	-5.75	-0.79	73.82	-9.19	-0.63	LW
V65ZUW		47.00	-13.79	-1.90	51.20	-31.81	-2.18	CA
YAL7GE		54.42	-6.37	-0.88	69.71	-13.29	-0.91	TZ

Sample SM47		Summary Statistics	Sample SM48	
Grand Means	60.790 psi		83.006 psi	
SD Btwn Labs	7.255 psi		14.620 psi	
Statistics based on 18 of 18 reporting participants				

Notes for Analysis 343

No Data Flags assigned for this analysis.

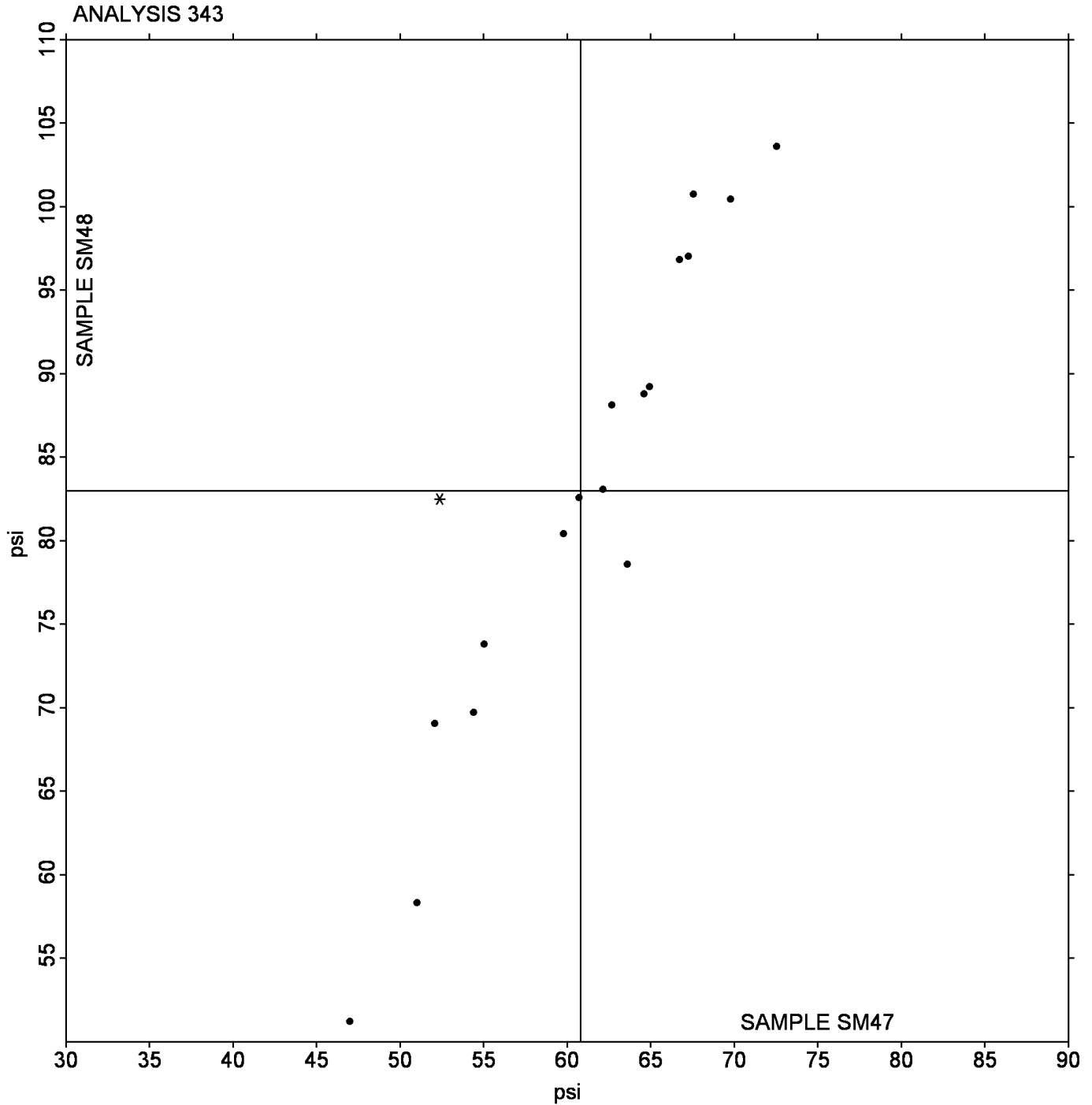
Instrument Code List

- | | |
|---|-------------------------------------|
| (CA) - CSI CS-163 | (CD) - CSI CS-163D |
| (LW) - L & W ZD Tensile Tester | (TA) - Thwing-Albert Tensile Tester |
| (TL) - TMI Lab Master | (TZ) - TMI Monitor/ZDT Tester |
| (XX) - Instrument make/model not specified by lab | |

TAPPI-CTS Interlaboratory Testing Program
Analysis 343
Z-Direction Tensile

Grand Mean Sample **SM47** = 60.790 psi

Grand Mean Sample **SM48** = 83.006 psi



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 345
Z-Direction Tensile, Recycled Paperboard

WebCode	Data Flag	Sample SZ47			Sample SZ48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MFQA9	X	157.80	99.64	18.77	159.00	101.12	18.47	PG
3X7HSB		57.46	-0.70	-0.13	57.72	-0.16	-0.03	LW
675K36		58.40	0.24	0.05	58.80	0.92	0.17	CA
6MQ54S		52.62	-5.54	-1.04	51.43	-6.45	-1.18	XX
7F8Q8M		65.72	7.56	1.42	63.74	5.86	1.07	TZ
8SLM8Q		65.50	7.34	1.38	63.70	5.82	1.06	DP
DPNGDE		50.78	-7.38	-1.39	51.30	-6.58	-1.20	TZ
E9X9AK		49.96	-8.20	-1.54	49.28	-8.60	-1.57	LW
EBKTBH		56.28	-1.88	-0.35	56.20	-1.68	-0.31	TZ
ETRYTT		59.64	1.48	0.28	56.78	-1.10	-0.20	TZ
J8W3MU		53.80	-4.36	-0.82	52.60	-5.28	-0.96	CA
JM841R		60.10	1.94	0.37	64.00	6.12	1.12	CD
RVNQD8		63.42	5.26	0.99	63.88	6.00	1.10	TL
YKB6LX		62.40	4.24	0.80	63.00	5.12	0.94	CA

Summary Statistics		
	Sample SZ47	Sample SZ48
Grand Means	58.160 psi	57.879 psi
SD Btwn Labs	5.308 psi	5.474 psi
Statistics based on 13 of 14 reporting participants		

Comments on assigned Data Flags for Test #345

2MFQA9 (X) - Extreme data.

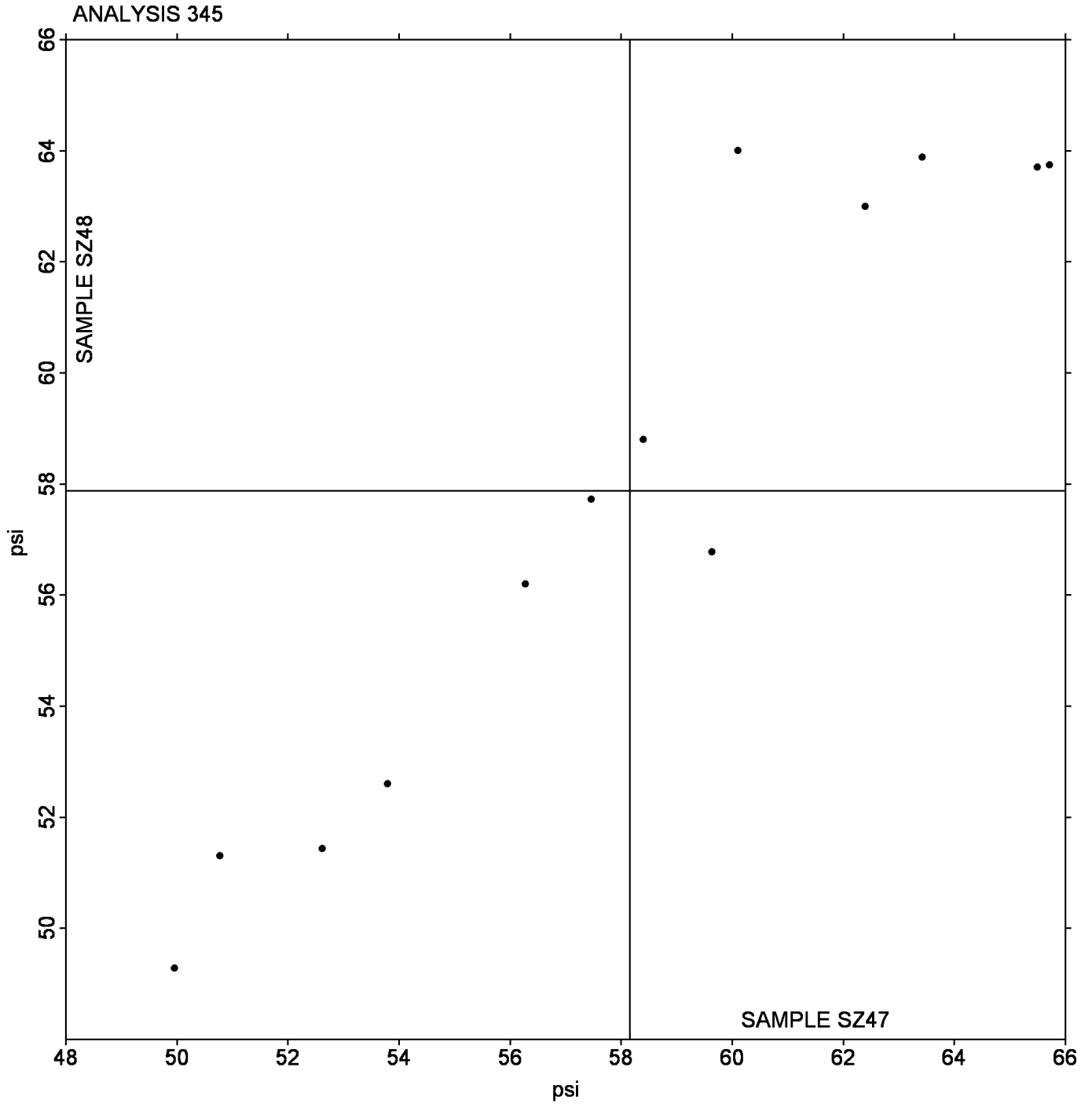
Instrument Code List

- | | |
|--------------------------------------|---|
| (CA) - CSI CS-163 | (CD) - CSI CS-163D |
| (DP) - Dek-Tron XP Series | (LW) - L & W ZD Tensile Tester |
| (PG) - Perkins Model A Mullen Tester | (TL) - TMI Lab Master |
| (TZ) - TMI Monitor/ZDT Tester | (XX) - Instrument make/model not specified by lab |

TAPPI-CTS Interlaboratory Testing Program
Analysis 345
Z-Direction Tensile, Recycled Paperboard

Grand Mean Sample **SZ47** = 58.160 psi

Grand Mean Sample **SZ48** = 57.879 psi



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program
Analysis 348
Internal Bond Strength - Modified Scott Mechanics

WebCode	Data Flag	Sample SN47			Sample SN48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
1A1N15		93.00	-4.30	-0.77	129.8	3.2	0.49	XX
3UT231		103.20	5.90	1.05	118.8	-7.7	-1.15	XX
43H9YB		100.20	2.90	0.52	130.0	3.5	0.52	HY
7XBWJN		94.60	-2.70	-0.48	129.6	3.1	0.46	XX
8GDPSU		91.40	-5.90	-1.05	121.4	-5.1	-0.76	HY
AH2CAT		95.76	-1.54	-0.27	117.2	-9.3	-1.39	HY
FZTTPR		88.20	-9.10	-1.62	126.0	-0.5	-0.08	HY
G1W8TA		100.50	3.20	0.57	130.2	3.7	0.55	HY
GB3Z3R		101.00	3.70	0.66	134.6	8.1	1.21	HY
HG2DXL		94.69	-2.61	-0.46	122.0	-4.5	-0.67	HY
HTY5Q7		106.20	8.90	1.59	128.2	1.7	0.25	HY
JKY5SR		102.60	5.30	0.95	135.4	8.9	1.33	HZ
KJJ9MX		93.56	-3.74	-0.67	119.3	-7.2	-1.08	HY
Q2DVQA		91.92	-5.38	-0.96	127.8	1.3	0.20	HY
QKCTAS		94.72	-2.58	-0.46	122.9	-3.6	-0.54	HY
RAW9Y1		104.60	7.30	1.30	133.2	6.7	1.00	HZ
SML5HQ		90.40	-6.90	-1.23	123.2	-3.3	-0.49	HY
TXDY5U		95.24	-2.06	-0.37	119.1	-7.4	-1.11	KR
TXY3P1		96.60	-0.70	-0.12	123.2	-3.3	-0.49	HZ
UFPRCP		95.80	-1.50	-0.27	124.6	-1.9	-0.28	HY
VM6FNV		103.40	6.10	1.09	139.8	13.3	1.99	HY
WVERCS		91.40	-5.90	-1.05	116.0	-10.5	-1.57	HY
XRBERC		108.92	11.62	2.07	137.3	10.8	1.62	HY
Z5AKC2	X	78.64	-18.66	-3.33	91.0	-35.5	-5.32	HZ

Sample SN47		Summary Statistics	Sample SN48	
Grand Means	97.301 1000th ft-lbs		126.50 1000th ft-lbs	
SD Btw Labs	5.607 1000th ft-lbs		6.68 1000th ft-lbs	
Statistics based on 23 of 24 reporting participants				

Comments on assigned Data Flags for Test #348

Z5AKC2 (X) - Extreme data.

Analysis Notes:

1A1N15 - One determination removed from the Lab Mean of Sample SN48 per Grubb's Test at 1% risk (TAPPI 1205).

Instrument Code List

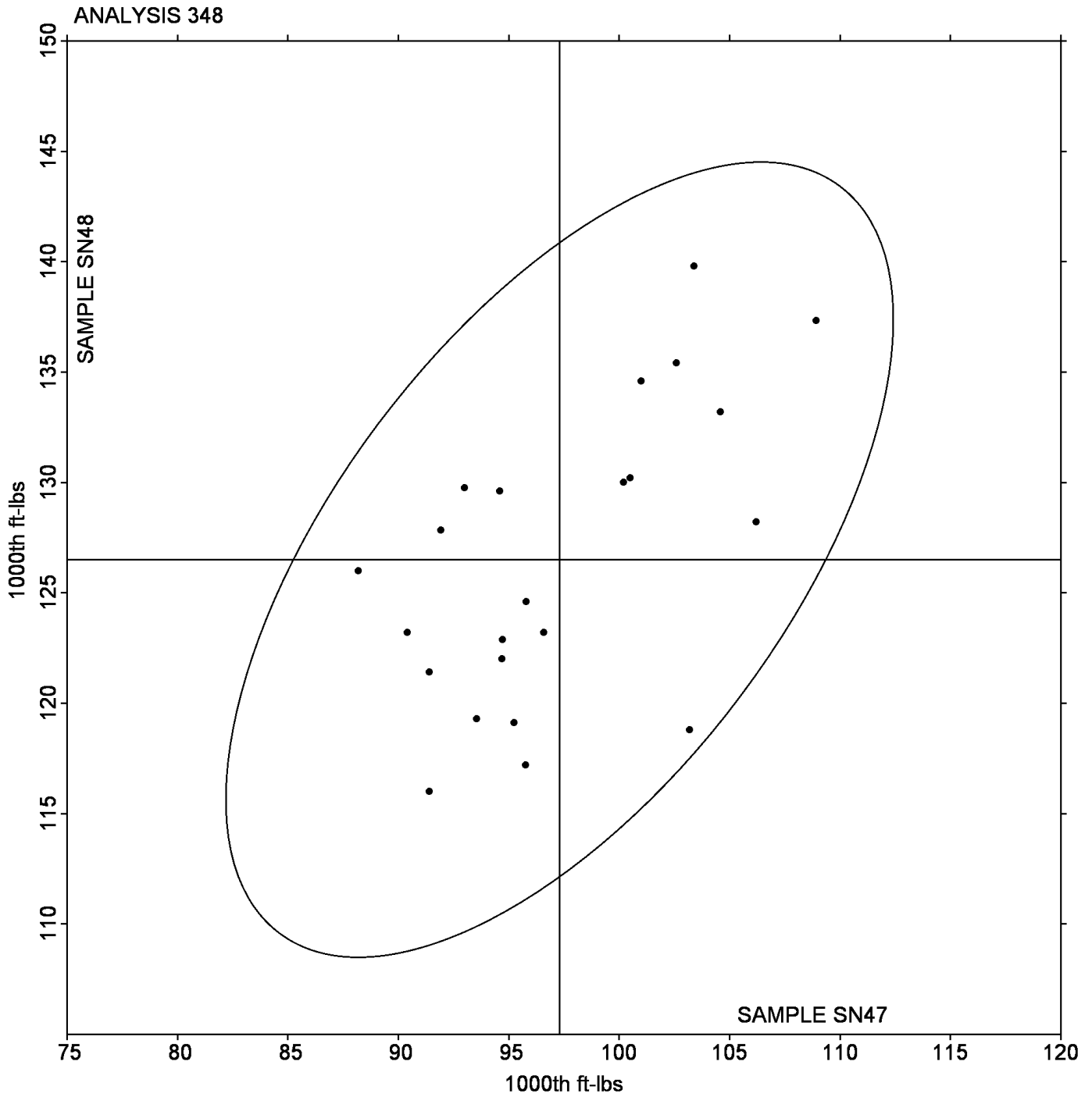
(HY) - Huygen Digitized Scott Internal Bond Tester
 (KR) - Kumagai Riki Kogyo Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress
 (XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program
Analysis 348
Internal Bond Strength - Modified Scott Mechanics

Grand Mean Sample **SN47** = 97.301 1000th ft-lbs

Grand Mean Sample **SN48** = 126.50 1000th ft-lbs



TAPPI-CTS Interlaboratory Testing Program
Analysis 349
Internal Bond Strength - Scott Bond Models

WebCode	Data Flag	Sample SP47			Sample SP48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
34B6RL		79.60	-5.25	-0.51	110.8	-5.9	-0.82	SC
41JU4L		78.64	-6.21	-0.61	111.1	-5.6	-0.78	TM
456LYG	X	48.80	-36.05	-3.52	89.4	-27.3	-3.81	TM
4H735N		82.20	-2.65	-0.26	115.4	-1.3	-0.18	SC
CRR3FR		98.00	13.15	1.28	118.4	1.7	0.24	TM
GQGHPU		89.80	4.95	0.48	121.8	5.1	0.72	SC
GWJSR7		77.77	-7.07	-0.69	115.8	-0.9	-0.13	TM
HUV6QN		79.00	-5.85	-0.57	111.0	-5.7	-0.79	TM
KH2SBG		107.60	22.75	2.22	119.0	2.3	0.33	TM
M1UER5		78.80	-6.05	-0.59	114.9	-1.8	-0.25	XX
Q8KFW8		72.99	-11.85	-1.16	107.4	-9.3	-1.30	TM
V9QQAT	X	110.16	25.31	2.47	153.3	36.7	5.12	TM
W2R5MJ		94.20	9.35	0.91	136.0	19.3	2.70	SC
YUTK3Z		89.60	4.75	0.46	120.4	3.7	0.52	XX
Z55MZX		74.80	-10.05	-0.98	114.8	-1.9	-0.26	TM

Sample SP47		Summary Statistics	Sample SP48	
Grand Means	84.846 1000th ft-lbs		116.67 1000th ft-lbs	
SD Btwn Labs	10.250 1000th ft-lbs		7.16 1000th ft-lbs	
Statistics based on 13 of 15 reporting participants				

Comments on assigned Data Flags for Test #349

456LYG (X) - Systematic error (data for both samples are low).

V9QQAT (X) - Extreme data.

Instrument Code List

(SC) - Scott Internal Bond Tester (Manual)

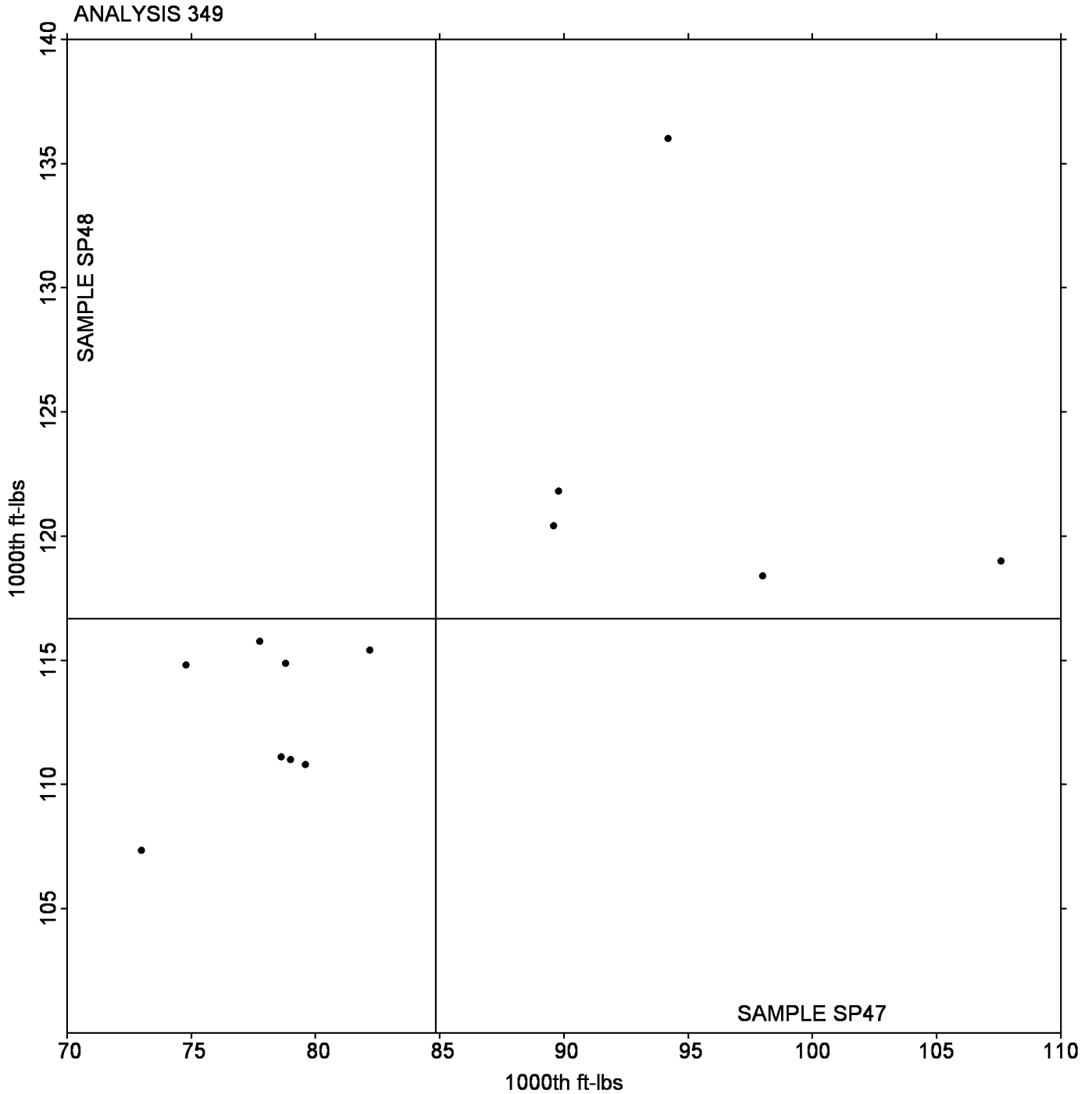
(TM) - TMI Monitor/Internal Bond Tester

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

TAPPI-CTS Interlaboratory Testing Program
Analysis 349
Internal Bond Strength - Scott Bond Models

Grand Mean Sample **SP47** = 84.846 1000th ft-lbs

Grand Mean Sample **SP48** = 116.67 1000th ft-lbs



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.