



Paper & Paperboard Interlaboratory Testing Program

Summary Report #247S - July 2010

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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:

Collaborative Testing Services, Inc.
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Sterling, Virginia 20166 USA
+1-571-434-1925
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

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 SA59			Sample SA60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2JYHAT		28.02	-2.85	-1.23	23.29	-2.96	-1.27
3NZDEF		28.24	-2.63	-1.13	24.35	-1.90	-0.81
6KZ3DQ		28.95	-1.92	-0.83	23.70	-2.55	-1.09
7FJXGG		29.79	-1.08	-0.47	26.93	0.68	0.29
86MBYC		33.10	2.23	0.96	28.80	2.55	1.10
8UZA7V		31.15	0.28	0.12	27.90	1.65	0.71
A3DVQW		29.98	-0.89	-0.38	26.70	0.45	0.20
BNQUPW		30.50	-0.37	-0.16	26.85	0.60	0.26
C2MPZ4		33.90	3.03	1.30	31.80	5.55	2.39
C7GPD4		35.02	4.15	1.78	31.32	5.07	2.18
CL49PR		31.64	0.76	0.33	25.94	-0.31	-0.13
F7HU2B		29.70	-1.17	-0.50	25.80	-0.45	-0.19
F9RGVM		28.06	-2.81	-1.21	23.20	-3.05	-1.31
G9TW32		35.03	4.16	1.79	28.56	2.31	0.99
JWW22W		30.72	-0.15	-0.07	24.98	-1.27	-0.55
KFUH7K		31.10	0.23	0.10	24.70	-1.55	-0.66
LAZ6G2		26.60	-4.27	-1.84	24.00	-2.25	-0.97
M34KAR		26.50	-4.37	-1.88	23.55	-2.70	-1.16
MJ9WXB	X	38.30	7.42	3.19	27.15	0.90	0.39
PFBGUQ		32.75	1.88	0.81	28.40	2.15	0.92
QFVLXB		28.05	-2.82	-1.21	23.75	-2.50	-1.07
QMXYPE		31.45	0.58	0.25	24.20	-2.05	-0.88
QTDAX9		32.49	1.62	0.70	28.05	1.80	0.77
R2YYPT		31.45	0.58	0.25	23.72	-2.53	-1.09
UQHKAX		32.80	1.93	0.83	28.00	1.75	0.75
VD3Q4R		32.65	1.78	0.76	27.01	0.76	0.33
VGRDDD		31.46	0.59	0.25	28.15	1.90	0.82
VW9DBH		31.89	1.02	0.44	25.64	-0.61	-0.26
Y7JYMN		32.96	2.09	0.90	26.64	0.39	0.17
YR7GG8		31.95	1.08	0.46	25.83	-0.42	-0.18
YY68GN		32.35	1.48	0.63	25.75	-0.50	-0.21
Z8AYHJ		26.40	-4.47	-1.92	23.20	-3.05	-1.31
Z8ZAHZ		31.29	0.42	0.18	29.22	2.97	1.28

Sample SA59		Summary Statistics	Sample SA60	
Grand Means	30.873 psi		26.248 psi	
SD Btw Labs	2.327 psi		2.328 psi	
Statistics based on 32 of 33 reporting participants				

Comments on assigned Data Flags for Test #305

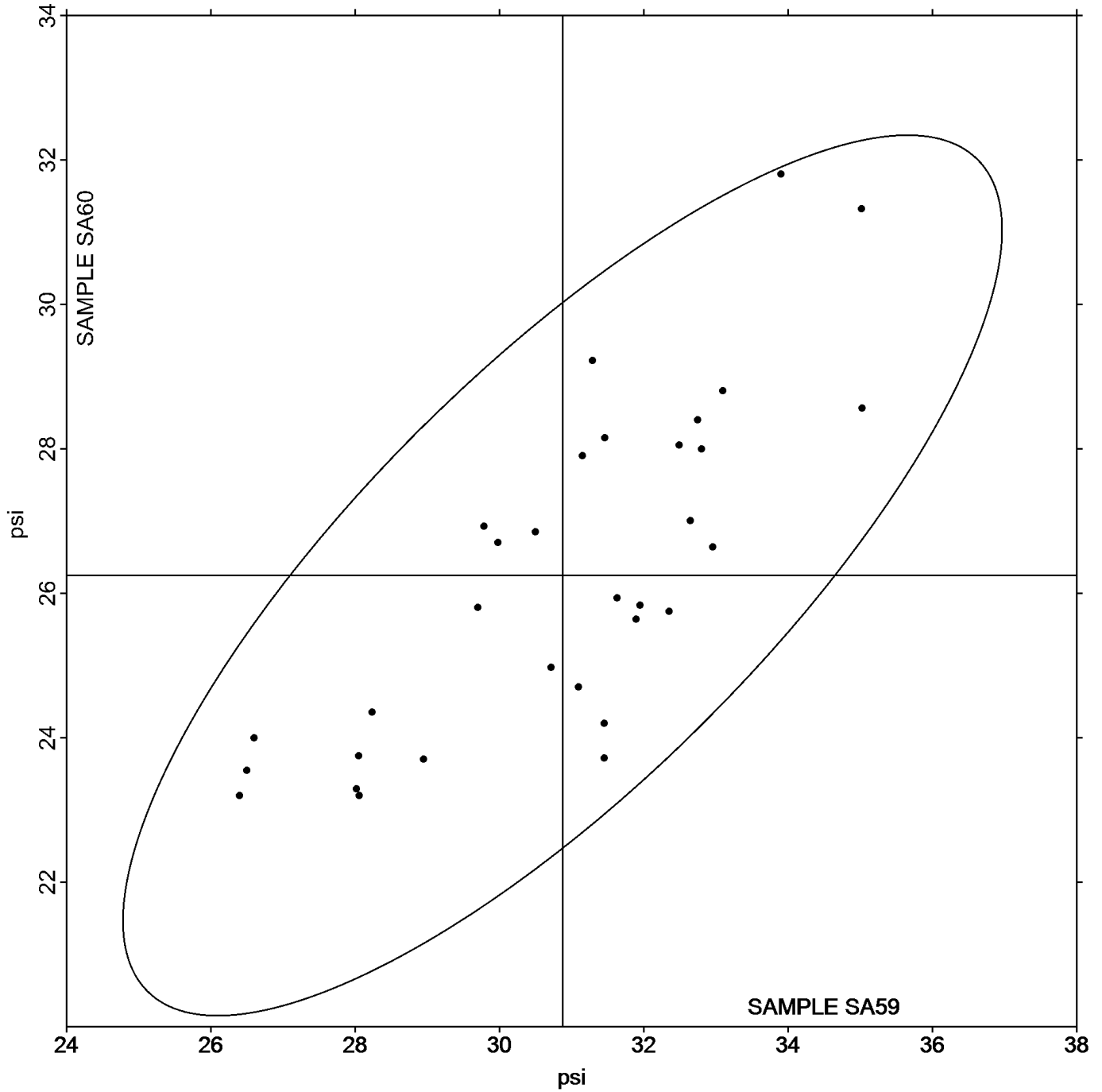
MJ9WXB (X) - Inconsistent in testing between samples, data for Sample SA59 are high.

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

Grand Mean Sample SA59 = 30.873 psi

Grand Mean Sample SA60 = 26.248 psi

ANALYSIS 305



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

WebCode	Data Flag	Sample SB59			Sample SB60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
44P3QN		52.56	-1.49	-0.50	66.78	0.80	0.21
6EQRE6		53.64	-0.42	-0.14	68.05	2.07	0.55
7JFRTX		57.57	3.52	1.17	69.70	3.72	0.99
88WRHM		56.16	2.11	0.70	67.36	1.38	0.37
8WTWK7		51.27	-2.78	-0.92	67.41	1.43	0.38
AT4BN2		54.08	0.03	0.01	69.58	3.60	0.96
B8FDEN		53.46	-0.59	-0.20	68.85	2.87	0.77
BDBE2G		57.50	3.45	1.15	70.10	4.12	1.10
CE7EXK		50.26	-3.79	-1.26	61.33	-4.65	-1.24
CQMYGG	*	57.90	3.85	1.28	63.05	-2.93	-0.78
CTGNZ3		58.52	4.47	1.49	69.94	3.96	1.06
ECWMW		48.39	-5.66	-1.88	58.66	-7.32	-1.96
F3L7MN		58.80	4.75	1.58	69.60	3.62	0.97
GTGDB2		54.07	0.02	0.01	66.12	0.14	0.04
KWHX3P		55.47	1.42	0.47	68.47	2.48	0.66
LNETE8		54.80	0.74	0.25	70.60	4.62	1.24
MNZ8QL		49.95	-4.10	-1.36	61.85	-4.13	-1.10
PK3TM3		53.55	-0.50	-0.17	64.53	-1.45	-0.39
QH4HZT		56.20	2.15	0.71	67.79	1.81	0.48
RNBE9Z		52.55	-1.50	-0.50	62.10	-3.88	-1.04
RQ88PH		53.71	-0.35	-0.11	63.77	-2.21	-0.59
RUZU3X		53.60	-0.45	-0.15	68.10	2.12	0.57
UGCUTF		55.23	1.18	0.39	65.99	0.01	0.00
VQWJWU		55.03	0.98	0.32	63.45	-2.53	-0.68
VU2LYM		51.10	-2.95	-0.98	62.60	-3.38	-0.90
W9WP28		55.40	1.35	0.45	63.10	-2.88	-0.77
X4BM88		49.94	-4.11	-1.37	62.77	-3.21	-0.86
XUE87B	X	72.30	18.25	6.06	84.10	18.12	4.84
YBXMA7		59.16	5.11	1.70	72.16	6.18	1.65
YKA6D4		55.23	1.18	0.39	68.08	2.10	0.56
YPJUP6		47.45	-6.60	-2.19	56.40	-9.58	-2.56
ZDT2U9		53.10	-0.95	-0.32	67.10	1.12	0.30

Sample SB59		Summary Statistics	Sample SB60	
Grand Means	54.053 psi		65.981 psi	
SD Btw Labs	3.009 psi		3.741 psi	
Statistics based on 31 of 32 reporting participants				

Comments on assigned Data Flags for Test #310

XUE87B (X) - Extreme data.

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

Analysis Notes:

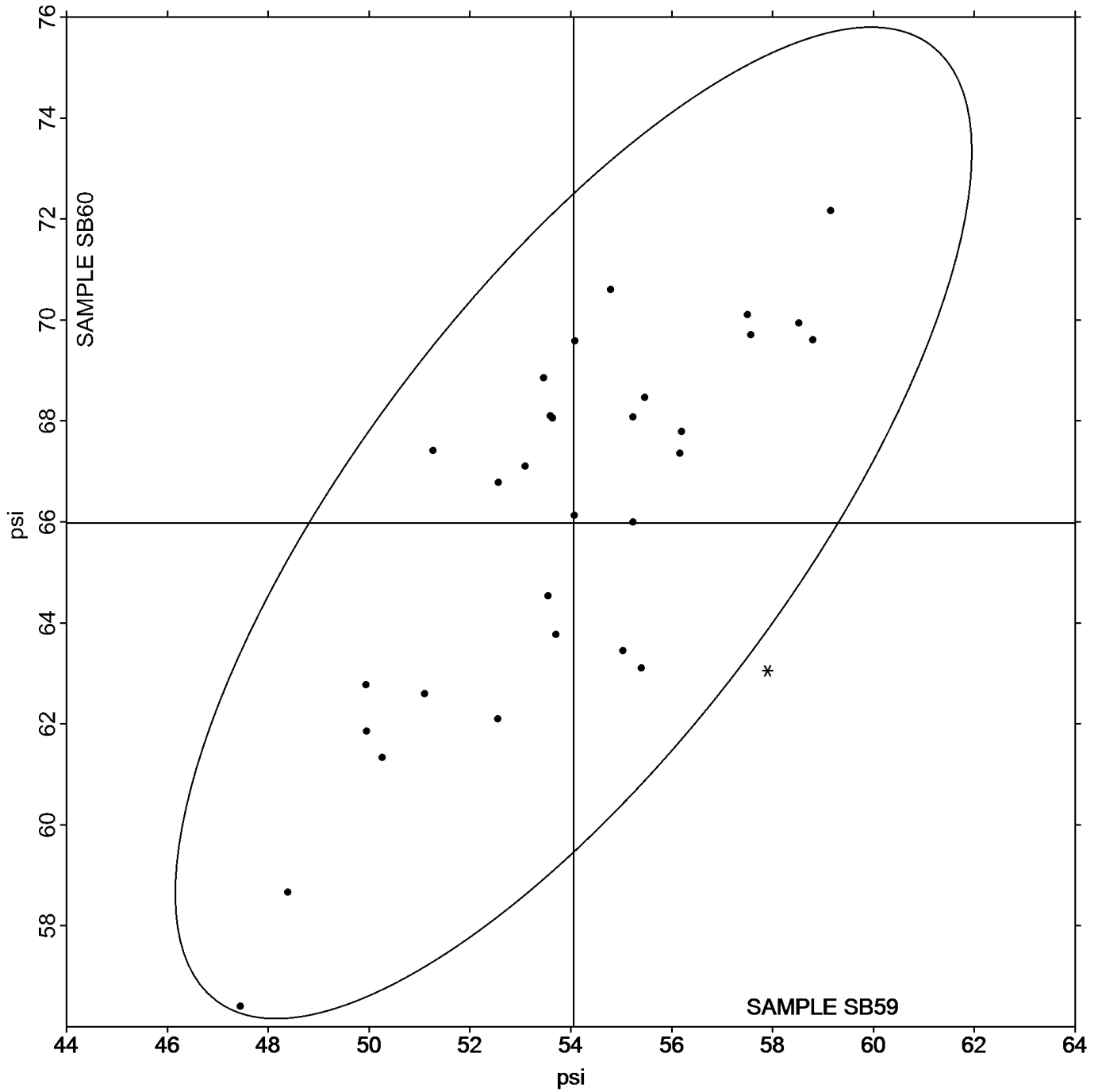
YKA6D4 - One determination removed from the Lab Mean of Sample SB59 per Grubb's Test at 1% risk (TAPPI 1205).

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

Grand Mean Sample **SB59** = 54.053 psi

Grand Mean Sample **SB60** = 65.981 psi

ANALYSIS 310



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

WebCode	Data Flag	Sample SK59			Sample SK60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
AHTBCM		21.77	1.29	0.68	21.14	0.73	0.45
D7VGYT		19.09	-1.39	-0.74	19.04	-1.37	-0.84
EJEKKV		20.18	-0.30	-0.16	20.29	-0.12	-0.07
FATMHW		20.63	0.15	0.08	20.73	0.33	0.20
H72CCN		22.67	2.19	1.16	21.70	1.29	0.79
K4LVWM		18.25	-2.23	-1.18	18.07	-2.34	-1.43
KVRP4L		18.91	-1.57	-0.83	19.08	-1.33	-0.81
LDZCPR		23.25	2.77	1.47	21.35	0.94	0.58
NKZ8CB		20.31	-0.17	-0.09	20.40	0.00	0.00
T873KG		21.07	0.59	0.31	20.79	0.38	0.23
TH4NLQ		18.70	-1.78	-0.94	18.80	-1.61	-0.98
VXXQKA		16.69	-3.79	-2.01	17.62	-2.79	-1.71
WFMNY7		20.97	0.49	0.26	21.57	1.16	0.71
X6TA9B		21.60	1.12	0.59	21.70	1.29	0.79
Y4J68C		23.10	2.62	1.39	23.80	3.39	2.08

		Summary Statistics		
	Sample SK59		Sample SK60	
Grand Means	20.479 Grams		20.406 Grams	
SD Btwn Labs	1.887 Grams		1.633 Grams	
Statistics based on 15 of 15 reporting participants				

Notes for Analysis 311

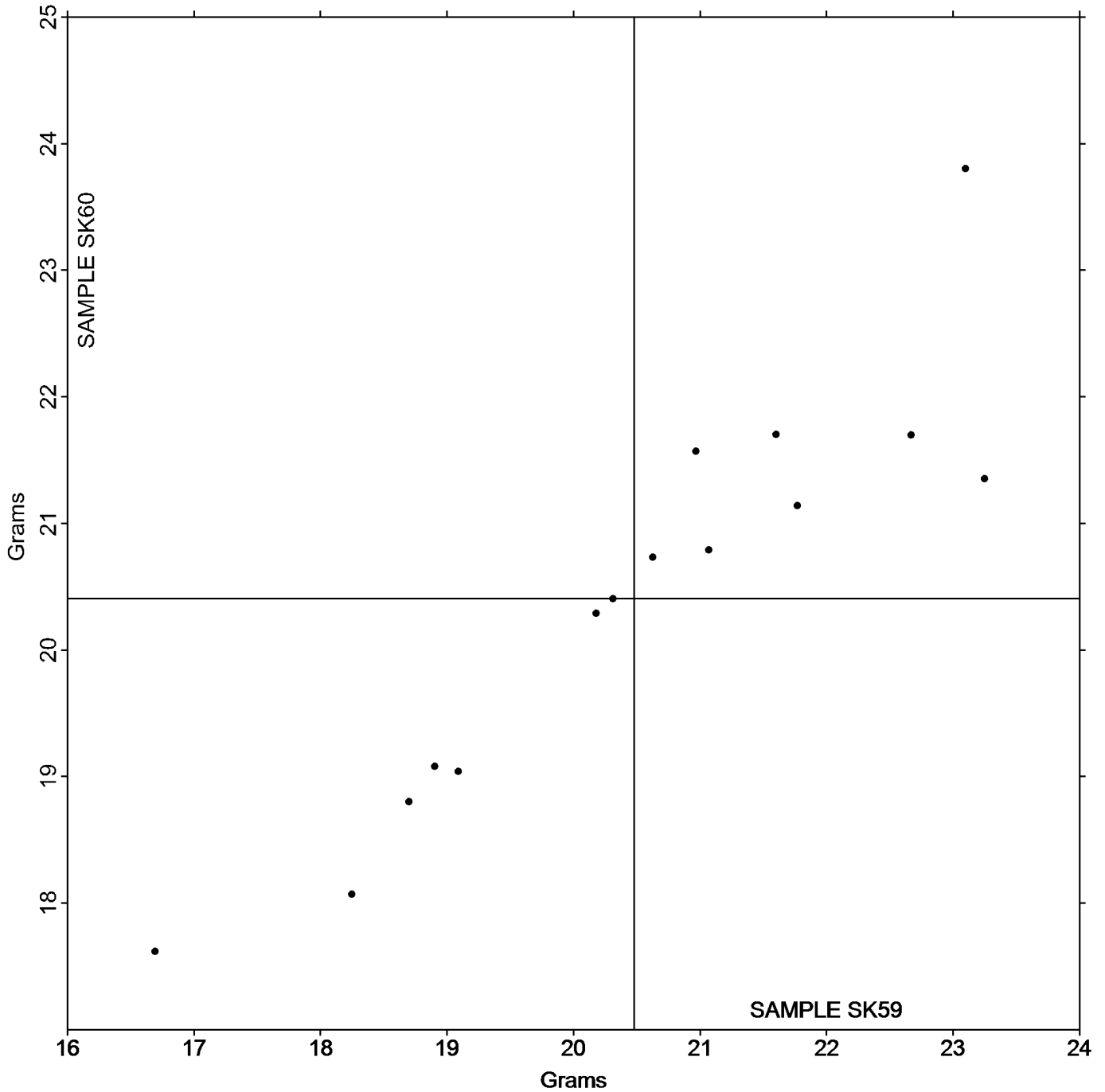
No Data Flags assigned for this analysis.

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

Grand Mean Sample **SK59** = 20.479 Grams

Grand Mean Sample **SK60** = 20.406 Grams

ANALYSIS 311



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 SC59			Sample SC60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
22E6LN		66.90	2.41	0.69	70.60	-1.80	-0.41
247628	X	69.90	5.41	1.56	74.46	2.06	0.47
2AZXCF		67.65	3.16	0.91	75.71	3.32	0.76
2J2K6D		63.30	-1.19	-0.34	71.20	-1.20	-0.27
2TQ4VE	X	31.96	-32.53	-9.38	29.82	-42.58	-9.73
34C7LJ		65.60	1.11	0.32	76.70	4.30	0.98
3FERG4		63.12	-1.37	-0.39	68.94	-3.46	-0.79
3H3KJT		67.34	2.85	0.82	69.59	-2.81	-0.64
3KTWGR		62.02	-2.47	-0.71	73.91	1.51	0.35
3YZYMZ	X	73.66	9.17	2.64	71.52	-0.88	-0.20
3ZRLXX		60.60	-3.89	-1.12	69.00	-3.40	-0.78
4UBR66		60.29	-4.20	-1.21	72.22	-0.18	-0.04
6466VW		64.72	0.23	0.07	66.18	-6.22	-1.42
6GVB97		59.24	-5.25	-1.51	71.65	-0.75	-0.17
6XEQBW		64.80	0.31	0.09	74.62	2.23	0.51
7DUNAZ		66.00	1.51	0.44	72.40	0.00	0.00
7GPG36		70.16	5.67	1.63	78.42	6.02	1.38
7MPLDG	*	62.47	-2.02	-0.58	62.14	-10.26	-2.34
7QQLJF		65.21	0.72	0.21	68.46	-3.93	-0.90
7U9Y43		61.06	-3.43	-0.99	70.60	-1.80	-0.41
7WXZCC		61.90	-2.59	-0.75	72.09	-0.31	-0.07
898XZC		64.66	0.17	0.05	76.02	3.62	0.83
8JGGTK		61.92	-2.57	-0.74	71.80	-0.60	-0.14
8UDXCN		66.00	1.51	0.44	74.80	2.40	0.55
8WT67B		62.36	-2.13	-0.61	73.10	0.70	0.16
8XHC9U		64.71	0.22	0.06	67.67	-4.73	-1.08
976TEA		67.65	3.16	0.91	78.11	5.71	1.31
AQYRF8		61.62	-2.87	-0.83	69.23	-3.17	-0.72
BNCEKV		61.00	-3.49	-1.01	70.20	-2.20	-0.50
CAQ8WE		59.35	-5.14	-1.48	70.06	-2.33	-0.53
CWRGR9		63.42	-1.07	-0.31	64.01	-8.38	-1.92
CZ98YJ		62.22	-2.27	-0.65	71.28	-1.12	-0.26
DAWG2C	X	62.60	-1.89	-0.54	57.30	-15.10	-3.45
DFYRTC		61.74	-2.75	-0.79	67.44	-4.96	-1.13
DJMTM6		60.50	-3.99	-1.15	71.30	-1.10	-0.25
DUEPZX		65.40	0.91	0.26	77.23	4.83	1.10
FWAEZ4		67.14	2.65	0.76	75.69	3.29	0.75
GXM8P6		62.39	-2.10	-0.60	73.34	0.94	0.22
H2FQTM		66.54	2.05	0.59	69.69	-2.71	-0.62
H2P6D4		57.00	-7.49	-2.16	62.60	-9.80	-2.24
HCAQ6K		66.42	1.94	0.56	72.98	0.59	0.13
HEX287		72.56	8.07	2.33	81.26	8.86	2.03
J3YNJJ		65.83	1.34	0.39	70.52	-1.87	-0.43

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

WebCode	Data Flag	Sample SC59			Sample SC60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LME3YC		64.96	0.47	0.14	75.84	3.44	0.79
LWRDKV		71.38	6.89	1.99	77.31	4.91	1.12
MV7UQ3		63.36	-1.13	-0.33	72.41	0.01	0.00
N7TKNL		67.86	3.37	0.97	71.86	-0.54	-0.12
NA4L9D		63.10	-1.39	-0.40	72.54	0.14	0.03
NDX2J2		68.50	4.01	1.16	75.06	2.66	0.61
NF7DCN		61.72	-2.77	-0.80	72.70	0.30	0.07
NK96VM		64.60	0.11	0.03	71.60	-0.80	-0.18
Q7QHTD		67.92	3.43	0.99	76.16	3.76	0.86
QCFC96	X	65.32	0.83	0.24	75.54	3.14	0.72
QL94TY	X	58.06	-6.43	-1.85	68.70	-3.70	-0.84
QLXDM9	X	68.24	3.75	1.08	64.08	-8.32	-1.90
R7TWEK		64.62	0.13	0.04	73.57	1.18	0.27
REDW84	X	65.98	1.49	0.43	60.54	-11.85	-2.71
T4VEEW	*	70.15	5.66	1.63	85.50	13.10	2.99
TUNQCX		63.87	-0.62	-0.18	70.68	-1.72	-0.39
U49EXD		67.54	3.05	0.88	74.04	1.64	0.38
U6CLEH		59.87	-4.61	-1.33	71.32	-1.07	-0.24
UX9YLC		63.48	-1.01	-0.29	66.93	-5.46	-1.25
VTDHU4	*	67.29	2.80	0.81	65.23	-7.17	-1.64
WBZKJP		69.17	4.68	1.35	77.43	5.03	1.15
WPD8DF		63.14	-1.35	-0.39	71.26	-1.14	-0.26
WXU7FC		62.00	-2.49	-0.72	71.00	-1.40	-0.32
X2KFBVX		61.50	-2.99	-0.86	71.40	-1.00	-0.23
X4AQLQ		59.96	-4.53	-1.31	69.96	-2.44	-0.56
XWPUH2		66.44	1.96	0.56	75.61	3.22	0.73
XXQHJD		66.98	2.49	0.72	72.82	0.42	0.10
Y2WYUF		65.01	0.52	0.15	76.62	4.23	0.97
YCULVP		70.82	6.33	1.82	78.76	6.36	1.45
YHLN7G		66.80	2.31	0.67	78.62	6.22	1.42
Z8GHRN	X	65.12	0.63	0.18	60.36	-12.04	-2.75
ZF2XWP		69.50	5.01	1.44	75.90	3.50	0.80
ZJBGCK	*	54.61	-9.88	-2.85	61.90	-10.49	-2.40
ZPTH8H		66.26	1.77	0.51	76.06	3.67	0.84

Sample SC59		Summary Statistics	Sample SC60	
Grand Means	64.489 Grams		72.395 Grams	
SD Btwn Labs	3.470 Grams		4.377 Grams	
Statistics based on 68 of 77 reporting participants				

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

Comments on assigned Data Flags for Test #312

247628 (X) - Data appears to be transposed between samples. Data switched by CTS.

2TQ4VE (X) - Extreme data.

3YZYMZ (X) - Inconsistent in testing between samples.

DAWG2C (X) - Inconsistent in testing between samples, data for Sample SC60 are low.

QCFC96 (X) - Data appears to be transposed between samples. Data switched by CTS.

QL94TY (X) - Data appear to be off by a factor of 1/2; data converted by CTS (x2).

QLXDM9 (X) - Inconsistent in testing between samples.

REDW84 (X) - Inconsistent in testing between samples.

Z8GHRN (X) - Inconsistent in testing between samples, data for Sample SC60 are low.

Analysis Notes:

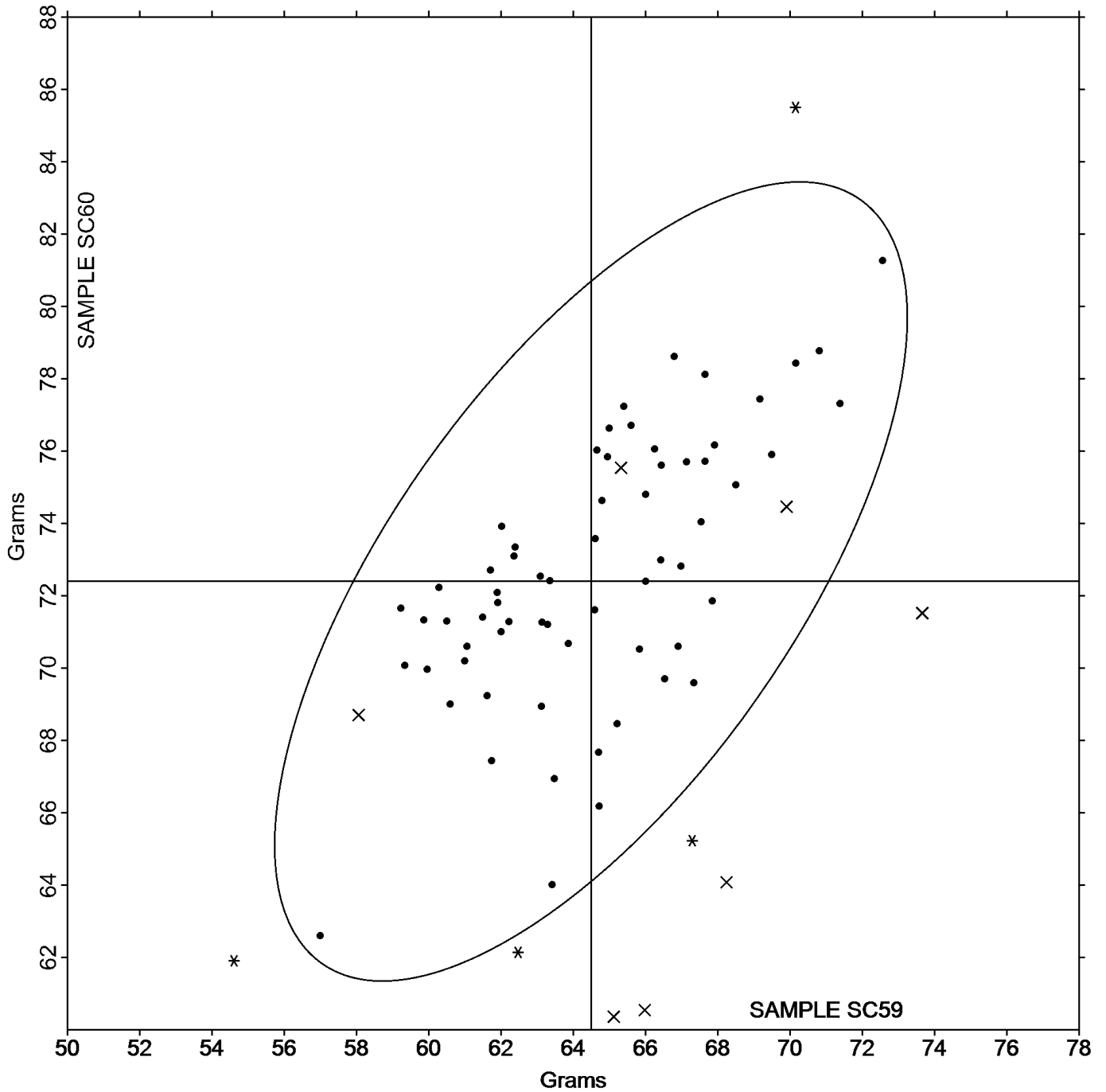
CWRGR9 - One determination removed from the Lab Mean of Sample SC60 per Grubb's Test at 1% risk (TAPPI 1205).

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

Grand Mean Sample **SC59** = 64.489 Grams

Grand Mean Sample **SC60** = 72.395 Grams

ANALYSIS 312



TAPPI-CTS Interlaboratory Testing Program

Analysis 314

Tearing Strength - Packaging Papers

WebCode	Data Flag	Sample SD59			Sample SD60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
38DW9Y	X	55.5	-125.6	-11.53	55.5	-125.3	-10.90
3WT8B9	X	214.0	32.8	3.01	219.0	38.2	3.32
44JCGE		184.0	2.8	0.26	176.4	-4.4	-0.39
4KWWKJ		182.9	1.8	0.16	177.3	-3.6	-0.31
4QWCFD	X	162.4	-18.8	-1.72	189.8	9.0	0.78
6VANHR		185.5	4.3	0.39	192.9	12.0	1.05
7MM2H2		166.0	-15.2	-1.39	162.0	-18.8	-1.64
8FL4AN		181.9	0.7	0.07	185.7	4.8	0.42
8N44E2		185.9	4.8	0.44	186.9	6.0	0.52
AJFKYM		200.3	19.1	1.75	201.5	20.7	1.80
B4HW3U		183.0	1.8	0.17	183.1	2.3	0.20
BEEWHE		185.9	4.7	0.43	188.4	7.6	0.66
CAHMUX		185.9	4.7	0.43	183.3	2.5	0.21
CJXL3M		165.9	-15.3	-1.41	171.1	-9.7	-0.85
D2QLAR		185.3	4.1	0.37	195.5	14.7	1.28
DZJLLJ		180.5	-0.7	-0.06	180.6	-0.2	-0.02
FKJGEX		174.2	-7.0	-0.64	173.6	-7.3	-0.63
FNTBPP	X	169.3	-11.9	-1.09	171.9	-9.0	-0.78
G6WDTF		159.6	-21.6	-1.98	159.2	-21.6	-1.88
GL6LBA		175.5	-5.7	-0.52	178.8	-2.1	-0.18
J7LU9M		175.6	-5.6	-0.51	178.0	-2.8	-0.25
JKU8AL		172.4	-8.8	-0.81	168.0	-12.8	-1.12
K8QBRX	X	180.0	-1.2	-0.11	181.4	0.6	0.05
N6RBY4		192.4	11.2	1.03	195.2	14.4	1.25
NLQA6R		168.2	-13.0	-1.20	171.6	-9.2	-0.80
NX4RHG		183.6	2.4	0.22	183.9	3.1	0.27
R43Y6M		204.4	23.2	2.13	206.0	25.2	2.19
RPYV62		173.2	-8.0	-0.73	178.4	-2.4	-0.21
RRU9BR		203.8	22.6	2.07	201.7	20.9	1.82
T3P7AB		186.6	5.4	0.50	177.7	-3.1	-0.27
T7H9VX		182.2	1.0	0.09	183.4	2.6	0.22
TXJ4UB	X	155.0	-26.2	-2.41	174.0	-6.8	-0.59
U8D2RU		201.1	19.9	1.83	195.3	14.5	1.26
U8RFZC		192.8	11.7	1.07	184.5	3.7	0.32
UULF88		180.3	-0.9	-0.08	180.8	-0.1	0.00
UW94H8		186.4	5.2	0.48	191.5	10.7	0.93
VFNMCH		189.6	8.4	0.77	191.3	10.4	0.91
VL4EHH	*	189.6	8.4	0.77	176.4	-4.4	-0.39
VP3PEH		166.4	-14.8	-1.35	165.1	-15.7	-1.37
VZF6NA		164.0	-17.2	-1.58	156.0	-24.8	-2.16
XTN8PR		175.3	-5.9	-0.54	170.2	-10.7	-0.93
YZATVN		178.0	-3.2	-0.29	178.1	-2.8	-0.24
Z44ZQR		168.2	-12.9	-1.19	171.5	-9.3	-0.81

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

WebCode	Data Flag	Sample SD59			Sample SD60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Z7G3VA		168.8	-12.4	-1.14	169.6	-11.2	-0.98
ZBRMX4		182.5	1.3	0.12	181.0	0.1	0.01
ZPXLAA		179.6	-1.6	-0.15	182.0	1.2	0.10

Summary Statistics			
	Sample SD59		Sample SD60
Grand Means	181.18 Grams		180.84 Grams
SD Btwn Labs	10.90 Grams		11.50 Grams
Statistics based on 40 of 46 reporting participants			

Comments on assigned Data Flags for Test #314

- 38DW9Y (X) - Extreme data.
- 3WT8B9 (X) - Systematic error (data for both samples are high).
- 4QWCFD (X) - Inconsistent in testing between samples.
- FNTBPP (X) - Data appear to be off by a factor of 1/4; data converted by CTS (x4).
- K8QBRX (X) - Data appear to be off by a factor of 1/4; data converted by CTS (x4).
- TXJ4UB (X) - Inconsistent in testing between samples and within the determinations for Sample SD59.

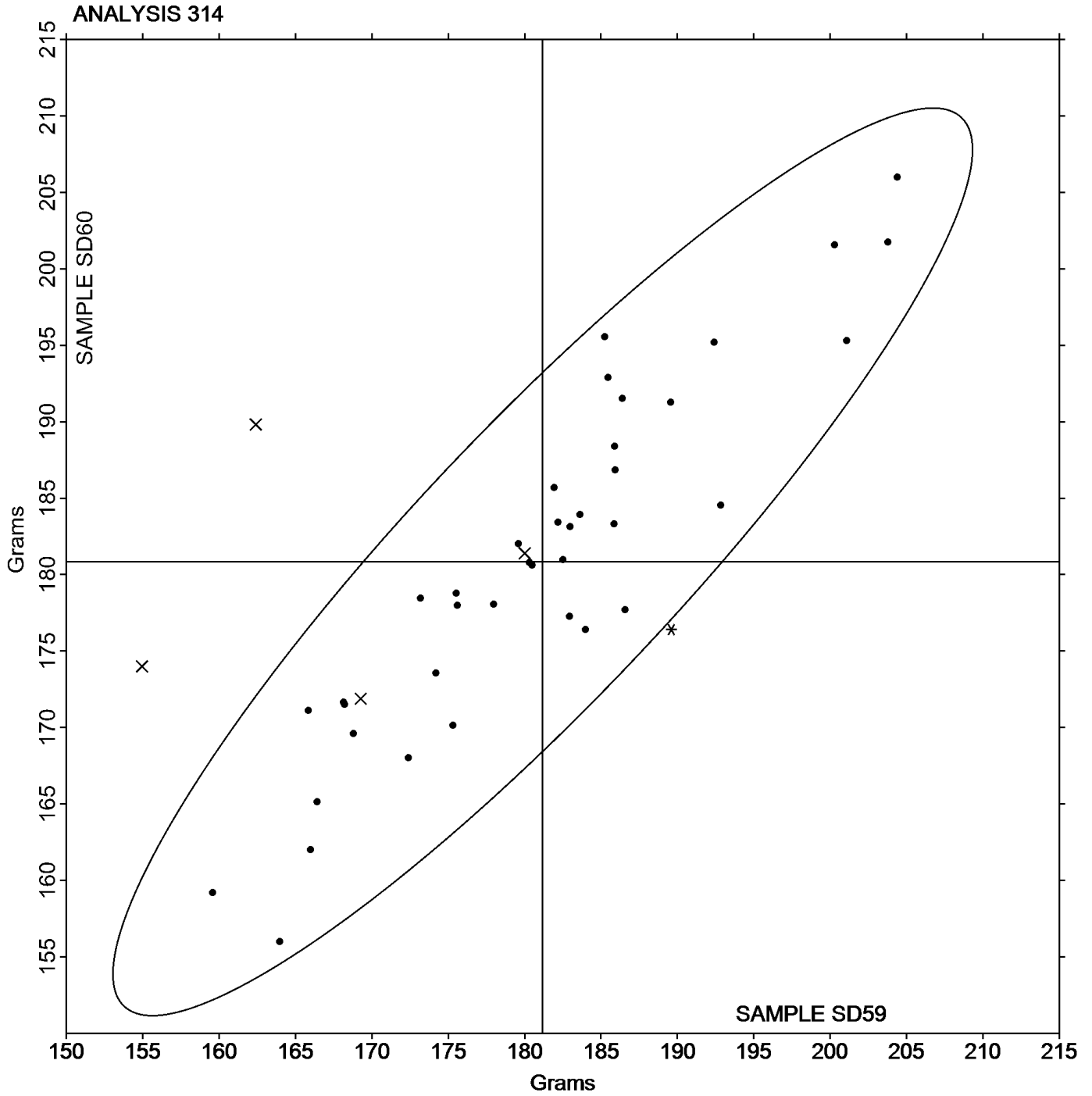
Analysis Notes:

- J7LU9M - Data appear to be reported as gf, not mN as indicated on datasheet. Unit changed by CTS.

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

Grand Mean Sample **SD59** = 181.18 Grams

Grand Mean Sample **SD60** = 180.84 Grams



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

WebCode	Data Flag	Sample SR59			Sample SR60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
48ULXW		1.893	-0.084	-0.66	2.000	-0.009	-0.06
6DCF6E		1.862	-0.115	-0.90	1.943	-0.066	-0.46
89LKCY	X	1.174	-0.804	-6.27	0.811	-1.199	-8.35
8YJ8BY		2.001	0.024	0.19	1.945	-0.064	-0.45
9UGLN2		1.914	-0.063	-0.49	1.908	-0.101	-0.70
ACKHXC		2.141	0.164	1.28	2.289	0.280	1.95
AHHBTY		2.013	0.036	0.28	2.027	0.018	0.13
C2H9QJ		1.859	-0.118	-0.92	1.944	-0.065	-0.45
E4AZC8		1.890	-0.088	-0.68	1.895	-0.114	-0.79
FZX9AW		1.905	-0.073	-0.57	1.888	-0.121	-0.84
HQFW2J		1.919	-0.058	-0.46	2.042	0.033	0.23
KB46H3		2.288	0.311	2.42	2.273	0.264	1.84
KHVQVV		1.969	-0.008	-0.07	2.038	0.029	0.20
MT3R8T		1.913	-0.064	-0.50	1.922	-0.087	-0.61
PQF9XD		1.956	-0.021	-0.16	1.974	-0.036	-0.25
UYCUR9		2.052	0.074	0.58	2.138	0.129	0.90
V9MFN3		1.889	-0.089	-0.69	1.888	-0.121	-0.84
WVE22A		2.246	0.269	2.10	2.259	0.250	1.74
ZMYRNW		1.883	-0.094	-0.74	1.792	-0.217	-1.51

		Summary Statistics			
		Sample SR59		Sample SR60	
Grand Means		1.9775 kN/m		2.0092 kN/m	
SD Btwn Labs		0.1281 kN/m		0.1436 kN/m	
Statistics based on 18 of 19 reporting participants					

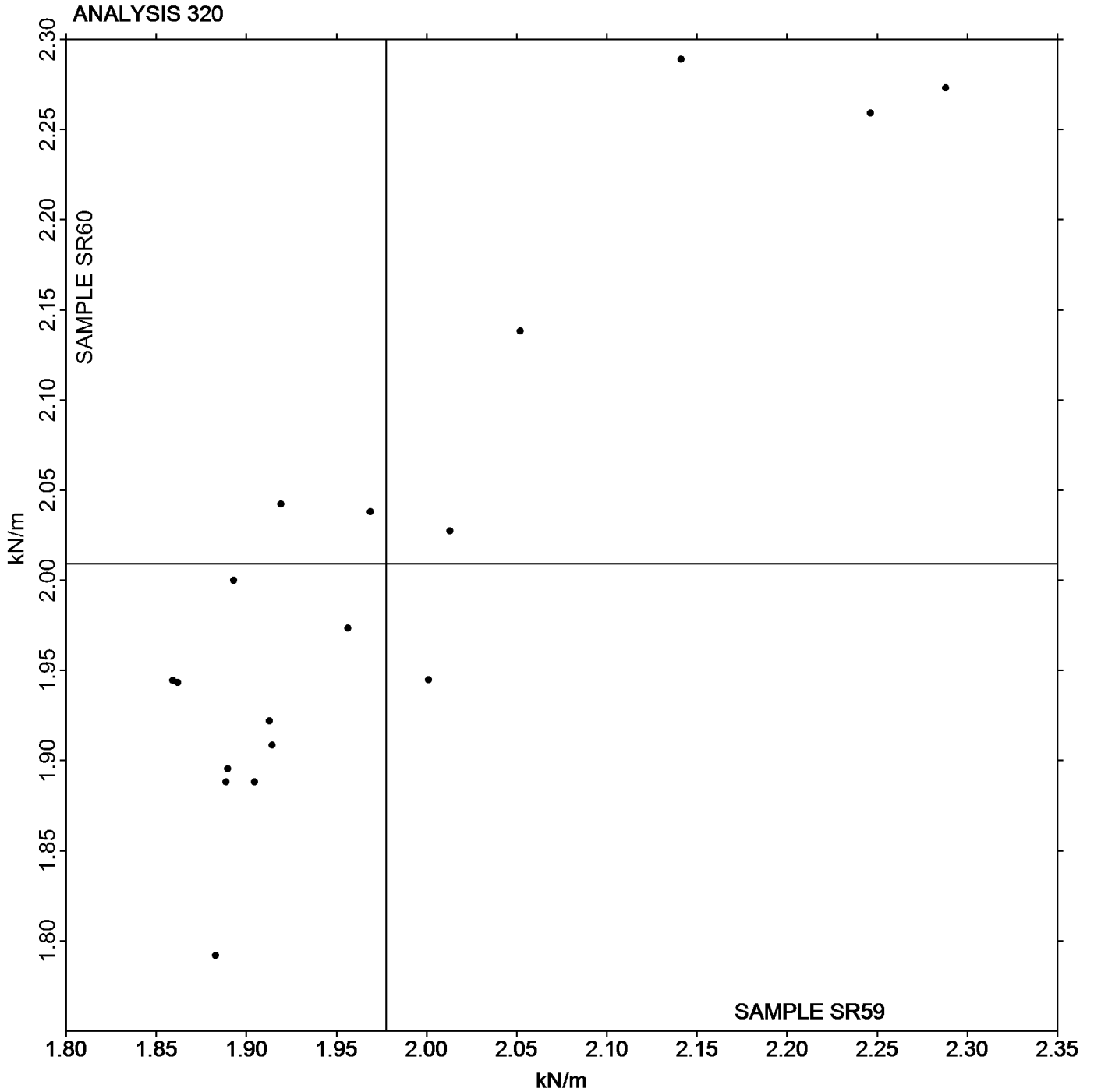
Comments on assigned Data Flags for Test #320

89LKCY (X) - Extreme data.

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

Grand Mean Sample **SR59** = 1.9775 kN/m

Grand Mean Sample **SR60** = 2.0092 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 SR59			Sample SR60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YWRE8		14.05	3.10	1.55	12.93	1.90	1.03
432J3X		10.31	-0.64	-0.32	10.72	-0.31	-0.17
44MW4G	*	6.23	-4.72	-2.36	9.70	-1.33	-0.72
877GRU		14.06	3.11	1.55	14.94	3.91	2.12
8MAV9N		9.72	-1.23	-0.61	10.40	-0.63	-0.34
AQ2NTC		10.70	-0.25	-0.13	10.61	-0.42	-0.23
ARAPTN		9.92	-1.04	-0.52	9.33	-1.70	-0.92
BJTNT7	X	29.87	18.91	9.44	30.98	19.95	10.83
CFU2YM		12.99	2.04	1.02	14.29	3.26	1.77
DFMRCA		12.63	1.68	0.84	11.59	0.56	0.31
F2U3XN		9.71	-1.25	-0.62	9.62	-1.41	-0.77
FC8E6Q		11.43	0.47	0.23	10.56	-0.47	-0.25
FK2FC4		10.30	-0.66	-0.33	10.89	-0.15	-0.08
GTAC4F		9.61	-1.34	-0.67	7.91	-3.12	-1.69
KLPARN		11.05	0.10	0.05	9.88	-1.15	-0.63
T26FYD		12.76	1.81	0.90	12.55	1.52	0.82
X2HUYG		9.80	-1.15	-0.58	10.58	-0.45	-0.25

		Summary Statistics	
	Sample SR59		Sample SR60
Grand Means	10.955 Joules/sq m		11.031 Joules/sq m
SD Btwn Labs	2.004 Joules/sq m		1.843 Joules/sq m
Statistics based on 16 of 17 reporting participants			

Comments on assigned Data Flags for Test #321

BJTNT7 (X) - Extreme data.

TAPPI-CTS Interlaboratory Testing Program

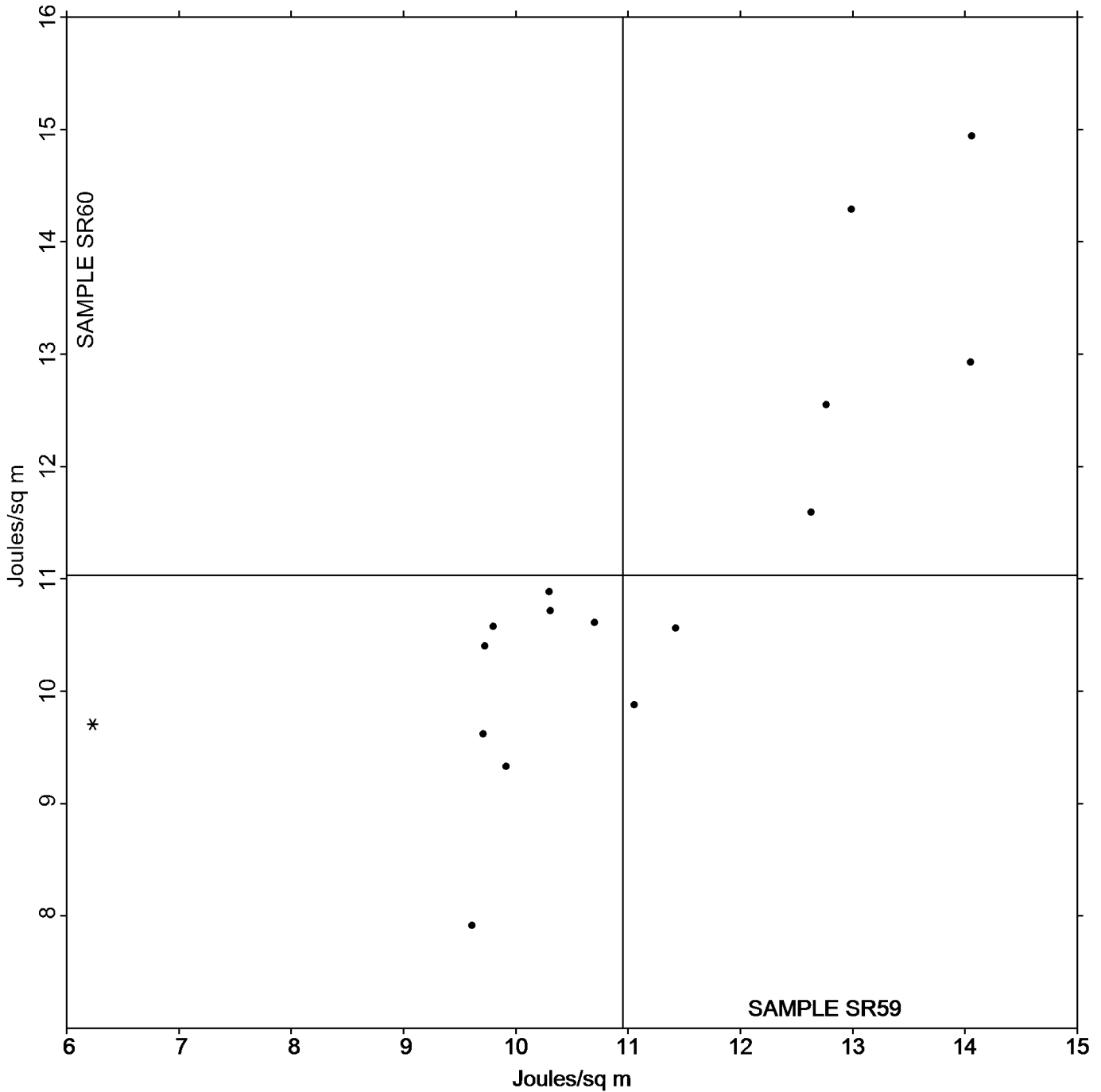
Analysis 321

Tensile Energy Absorption - Newsprint

Grand Mean Sample **SR59** = 10.955 Joules/sq m

Grand Mean Sample **SR60** = 11.031 Joules/sq m

ANALYSIS 321



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 SR59			Sample SR60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
77CCXV		1.2350	0.2495	1.89	1.2439	0.2704	1.87
8DB8JZ		1.1940	0.2085	1.58	1.1760	0.2025	1.40
9KYDKC		0.9758	-0.0097	-0.07	0.9905	0.0170	0.12
ACWJBX		1.0100	0.0245	0.19	0.9570	-0.0165	-0.11
AWH73D		0.9830	-0.0025	-0.02	0.9960	0.0225	0.16
BL97MH		0.8760	-0.1095	-0.83	0.7680	-0.2055	-1.42
DGNZ2R		1.0240	0.0385	0.29	0.9730	-0.0005	0.00
EVHYDM		1.1360	0.1505	1.14	1.1810	0.2075	1.44
HGKQD6		0.8640	-0.1215	-0.92	0.8110	-0.1625	-1.13
JCQNBV		0.8590	-0.1265	-0.96	0.8780	-0.0955	-0.66
JE9AMK		0.8620	-0.1235	-0.94	0.8650	-0.1085	-0.75
LKQHXE		0.8720	-0.1135	-0.86	0.8310	-0.1425	-0.99
NPZQ2A		0.9320	-0.0535	-0.41	0.9790	0.0055	0.04
PAVHYE		0.8160	-0.1695	-1.29	0.8340	-0.1395	-0.97
Y3MAL9		1.1500	0.1645	1.25	1.1300	0.1565	1.08
YHLAGH	X	2.4586	1.4731	11.19	2.5533	1.5798	10.95
ZBHHRK		0.9791	-0.0064	-0.05	0.9625	-0.0110	-0.08

		Summary Statistics			
		Sample SR59		Sample SR60	
Grand Means		0.98549	Percent	0.97349	Percent
SD Btwn Labs		0.13169	Percent	0.14426	Percent
Statistics based on 16 of 17 reporting participants					

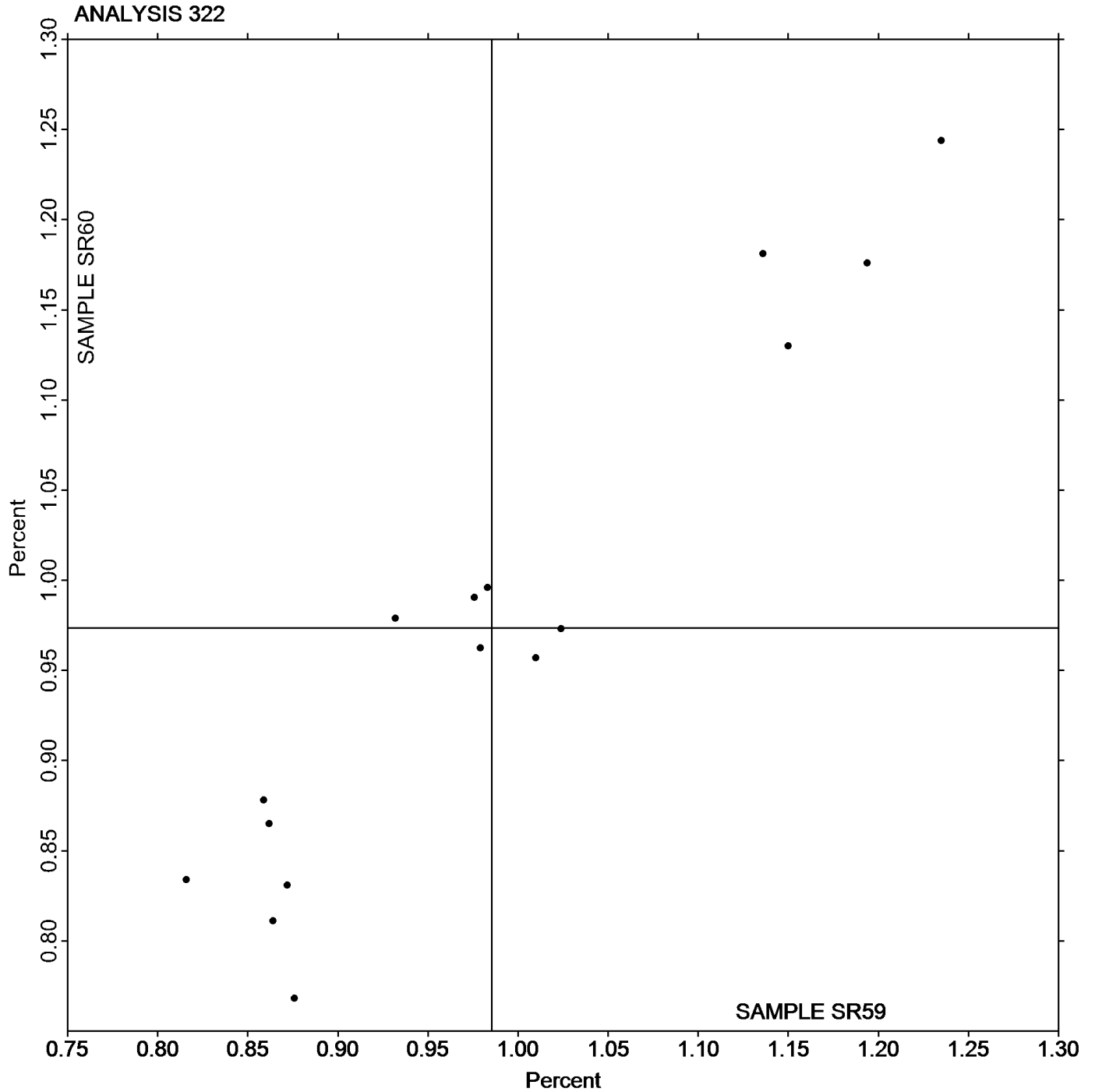
Comments on assigned Data Flags for Test #322

YHLAGH (X) - Extreme data.

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

Grand Mean Sample **SR59** = 0.98549 Percent

Grand Mean Sample **SR60** = 0.97349 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 SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
22CF2Y		6.018	0.510	1.79	5.919	0.422	1.52	LI
2LCDB9		5.755	0.247	0.87	5.867	0.370	1.33	TO
2R2PCW		5.910	0.403	1.41	5.661	0.164	0.59	TO
38R6VM		5.553	0.045	0.16	5.565	0.068	0.25	LH
46DGVZ	*	5.938	0.431	1.51	5.534	0.037	0.13	TB
4UDC2L		5.269	-0.238	-0.83	5.099	-0.397	-1.43	TB
62TNFX		5.366	-0.142	-0.50	5.412	-0.085	-0.31	LH
6PJXUP		5.272	-0.235	-0.82	5.397	-0.100	-0.36	RE
6PR2XM		5.021	-0.487	-1.71	5.332	-0.165	-0.60	TB
74WNA4		5.577	0.069	0.24	5.360	-0.137	-0.49	TO
7D3FM6		5.463	-0.045	-0.16	5.412	-0.085	-0.31	TO
82RNWV		5.527	0.019	0.07	5.375	-0.122	-0.44	TO
8ABYGB		5.352	-0.155	-0.55	5.373	-0.124	-0.45	LH
8W38K6		5.620	0.112	0.39	5.391	-0.106	-0.38	TJ
9DQUR7		5.560	0.053	0.18	5.533	0.036	0.13	LH
9E7YFW		5.779	0.272	0.95	5.607	0.110	0.40	LH
A62C26		5.339	-0.168	-0.59	5.488	-0.009	-0.03	IM
AHPA9U		5.539	0.031	0.11	5.536	0.039	0.14	LH
AHV47E		5.193	-0.314	-1.10	5.317	-0.180	-0.65	IK
AZ9JDM		5.985	0.478	1.68	6.026	0.530	1.91	TJ
BCPMBY		5.564	0.056	0.20	5.551	0.054	0.19	TC
BZMTJN		5.727	0.219	0.77	5.923	0.426	1.54	XX
CD8CTN		6.103	0.595	2.09	6.070	0.573	2.06	LH
CHCRMY		5.413	-0.094	-0.33	5.103	-0.394	-1.42	TX
CQ9GT4		5.382	-0.126	-0.44	5.383	-0.114	-0.41	LI
D6679Z		5.790	0.282	0.99	5.687	0.190	0.68	LI
DFHDRU		5.406	-0.101	-0.36	5.334	-0.163	-0.59	IM
DJEYGC		5.641	0.134	0.47	5.596	0.099	0.36	IA
DX29E3		5.572	0.064	0.23	5.517	0.020	0.07	IK
EQHFM4		5.439	-0.069	-0.24	5.545	0.048	0.17	XX
EQWR7F		5.375	-0.133	-0.47	5.331	-0.166	-0.60	XX
F3NJ2P		5.375	-0.132	-0.46	5.521	0.024	0.09	TB
FU6QJT		5.216	-0.291	-1.02	4.961	-0.536	-1.93	TI
HHNLP3		5.440	-0.068	-0.24	5.520	0.023	0.08	TJ
HVQVVH		5.369	-0.139	-0.49	5.301	-0.196	-0.71	TP
JCT98B		5.858	0.350	1.23	5.788	0.291	1.05	TO
K4JA28	X	5.790	0.282	0.99	5.037	-0.460	-1.66	TJ
K93VW2		5.423	-0.085	-0.30	5.470	-0.027	-0.10	LH
LCEDBN	X	4.949	-0.559	-1.96	4.622	-0.875	-3.15	TF
LEEFWQ		5.313	-0.195	-0.68	5.361	-0.136	-0.49	IM
LHKHZE		5.690	0.182	0.64	5.641	0.144	0.52	TI
LKB8F9		5.275	-0.233	-0.82	5.310	-0.187	-0.67	TF
LLZH82		5.268	-0.239	-0.84	5.360	-0.136	-0.49	LH

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

WebCode	Data Flag	Sample SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
LUMLTG		5.217	-0.291	-1.02	5.372	-0.125	-0.45	LH
LWHQF9	*	5.184	-0.324	-1.13	4.855	-0.642	-2.31	LA
MLTNV8		5.461	-0.047	-0.16	5.388	-0.109	-0.39	LH
NJKWBW	X	4.722	-0.786	-2.75	4.514	-0.983	-3.54	RE
NRFYJA		5.625	0.118	0.41	5.705	0.208	0.75	LX
PCRCBV		6.022	0.515	1.80	5.987	0.490	1.76	LH
QKAWDZ		5.465	-0.042	-0.15	5.438	-0.059	-0.21	KA
R6MB27		5.170	-0.338	-1.19	5.294	-0.203	-0.73	IX
RKB77B		5.455	-0.053	-0.18	5.427	-0.070	-0.25	LH
RPVC4Q		5.122	-0.385	-1.35	5.435	-0.062	-0.22	LH
RYZF8T		5.705	0.198	0.69	5.818	0.321	1.16	LH
RZNVZK		5.961	0.454	1.59	5.908	0.411	1.48	LH
TDWXJK		5.643	0.135	0.47	5.711	0.214	0.77	LH
TRR2L6		6.008	0.501	1.76	5.910	0.413	1.49	LX
U4GDBM		5.389	-0.119	-0.42	5.414	-0.083	-0.30	ID
UKQMDU		5.760	0.253	0.89	5.791	0.294	1.06	TA
UNFCK		5.070	-0.438	-1.53	5.073	-0.424	-1.53	MR
UYKT84		5.385	-0.123	-0.43	5.440	-0.057	-0.21	LH
VCWL6G		4.978	-0.529	-1.86	4.945	-0.552	-1.99	ID
VPDRMA		4.826	-0.681	-2.39	4.816	-0.681	-2.45	TP
VYTFTW		5.340	-0.168	-0.59	5.375	-0.122	-0.44	LH
X8ZA4L		5.396	-0.112	-0.39	5.667	0.170	0.61	XX
Z2V8BJ		5.662	0.154	0.54	5.469	-0.028	-0.10	SP
ZBBK99		6.080	0.573	2.01	6.083	0.586	2.11	TB
ZNNJLP		5.391	-0.117	-0.41	5.502	0.005	0.02	VM

	Sample SF59	Summary Statistics	Sample SF60
Grand Means	5.5076 kN/m		5.4970 kN/m
SD Btw Labs	0.2852 kN/m		0.2775 kN/m
Statistics based on 65 of 68 reporting participants			

Comments on assigned Data Flags for Test #325

K4JA28 (X) - Inconsistent in testing between samples.

LCEDBN (X) - Inconsistent in testing between samples, data for Sample SF60 are low.

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

Analysis Notes:

46DGVZ - Data appear to be reported as kg/15mm, not kg/inch as indicated on datasheet. Unit changed by CTS.

BZMTJN - Data appear to be reported as kg/15mm, not kg/inch as indicated on datasheet. Unit changed by CTS.

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

Instrument Code List

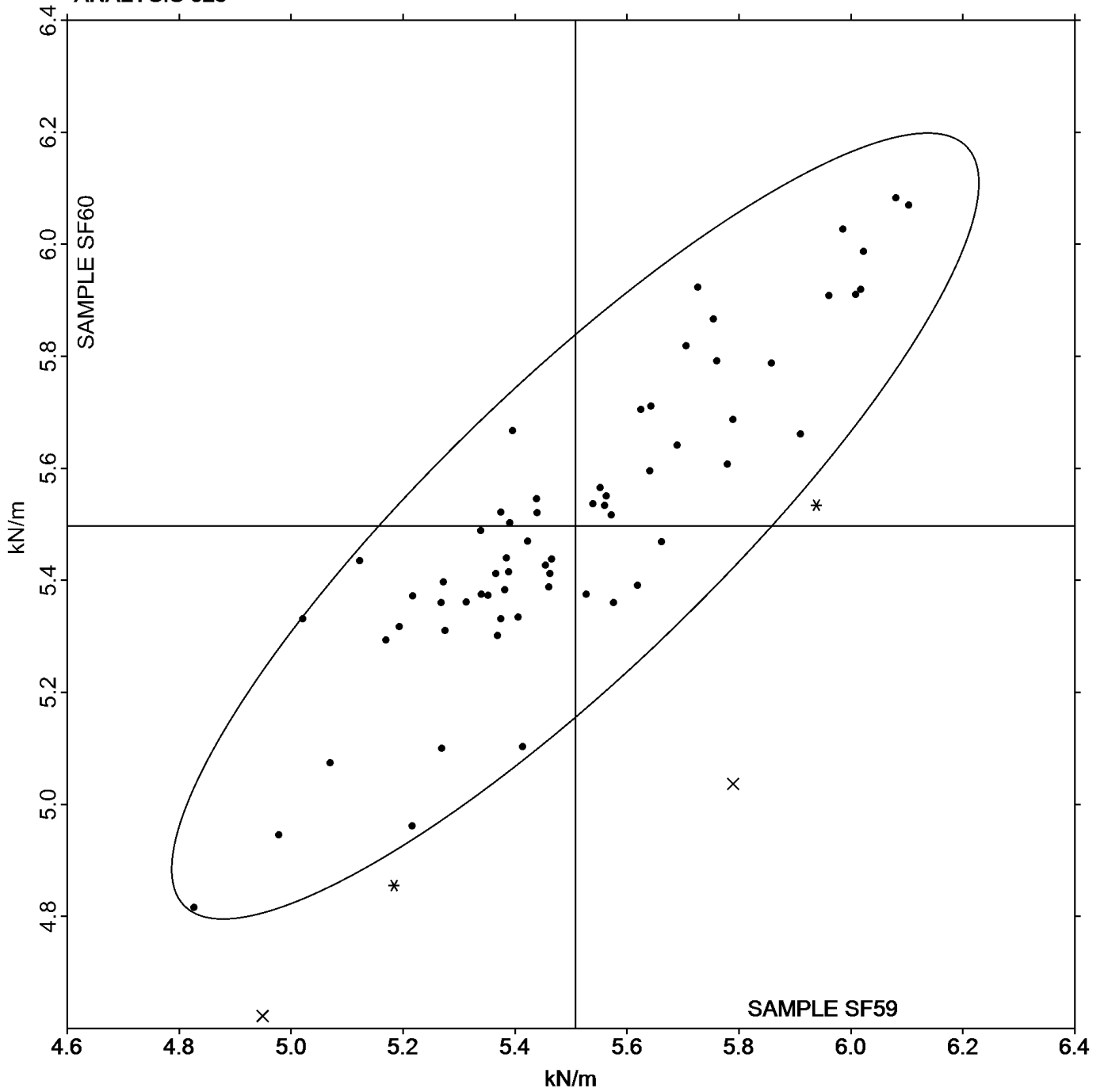
(IA) - Instron 1011	(ID) - Instron 4201/4202
(IK) - Instron 4400 Series	(IM) - Instron 5500 Series
(IX) - Instron (model not specified)	(KA) - Zwick Model 1425
(LA) - L & W Tensile - Autoline 300	(LH) - L & W Alwetron TH1 (Horizontal) SE 060/065F
(LI) - L & W Tensile Tester SE 062	(LX) - L & W (model 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 **SF59** = 5.5076 kN/m

Grand Mean Sample **SF60** = 5.4970 kN/m

ANALYSIS 325



TAPPI-CTS Interlaboratory Testing Program

Analysis 327

Tensile Energy Absorption - Printing Papers

WebCode	Data Flag	Sample SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2ENRYF		69.00	-0.06	-0.01	77.01	-1.09	-0.17	LX
33X7MJ		67.60	-1.46	-0.28	78.36	0.26	0.04	LH
42F39A		57.20	-11.86	-2.25	63.05	-15.06	-2.33	MR
498X8M		68.37	-0.69	-0.13	73.63	-4.47	-0.69	KA
6J2RNP	X	67.68	-1.38	-0.26	81.36	3.26	0.51	TB
8E8L94		69.92	0.86	0.16	83.75	5.65	0.87	TO
8NH9N6		70.61	1.55	0.29	77.26	-0.84	-0.13	LH
9HV4EV		67.02	-2.04	-0.39	77.28	-0.83	-0.13	LI
9HZ7CL		63.76	-5.30	-1.01	76.14	-1.96	-0.30	LH
A46YFX		76.30	7.24	1.37	81.70	3.60	0.56	LH
AWXBJX		69.18	0.12	0.02	77.45	-0.65	-0.10	IM
AYPDK6		69.05	-0.01	0.00	74.64	-3.46	-0.54	LI
D8BLNJ		72.59	3.53	0.67	80.50	2.40	0.37	LX
G4DKMC		59.72	-9.34	-1.77	71.42	-6.68	-1.04	TF
HA8NJP		67.15	-1.91	-0.36	80.69	2.59	0.40	TO
HDQZZK		61.64	-7.41	-1.41	73.93	-4.17	-0.65	LH
HRXYYJ		71.26	2.20	0.42	79.53	1.43	0.22	XX
KZMFM4		67.46	-1.59	-0.30	73.61	-4.50	-0.70	LH
L3NQBR		62.04	-7.02	-1.33	74.95	-3.15	-0.49	IM
LGA8W4		72.94	3.88	0.74	83.73	5.63	0.87	LH
LMGMVR		72.16	3.10	0.59	77.66	-0.44	-0.07	LI
M9GEVA		67.90	-1.16	-0.22	72.40	-5.70	-0.88	LI
MQ3XRG		70.62	1.56	0.30	77.46	-0.64	-0.10	TJ
MRYZMH		72.56	3.50	0.66	84.59	6.49	1.00	TB
N2XQDD		81.29	12.23	2.32	90.63	12.53	1.94	XX
N3MZLT		61.17	-7.89	-1.50	70.13	-7.97	-1.23	LH
NULGG7		66.27	-2.79	-0.53	76.53	-1.57	-0.24	LH
NWYY4A		67.32	-1.74	-0.33	79.61	1.51	0.23	LI
Q7QVWE	X	35.59	-33.47	-6.35	33.51	-44.59	-6.91	TB
RXY4ZT	X	55.31	-13.75	-2.61	52.56	-25.54	-3.96	RE
T7429A		72.39	3.33	0.63	76.33	-1.77	-0.27	TI
TP2ZFG		66.33	-2.73	-0.52	76.95	-1.16	-0.18	LH
TQQELT		64.08	-4.98	-0.94	76.43	-1.67	-0.26	LH
U6TY2N		70.57	1.51	0.29	84.72	6.62	1.03	XX
UPYME7	X	27.33	-41.72	-7.92	28.31	-49.79	-7.71	TP
V3RTFM		70.18	1.12	0.21	76.09	-2.01	-0.31	LH
VBFB73U		76.33	7.27	1.38	88.88	10.78	1.67	VM
W67R9G		74.91	5.85	1.11	79.82	1.72	0.27	LH
WFVEHC		78.90	9.84	1.87	89.59	11.49	1.78	IM
WPVKZL		77.35	8.29	1.57	87.88	9.78	1.51	ID
XE64J2		65.20	-3.86	-0.73	73.30	-4.80	-0.74	LH
XGK3FX		70.37	1.31	0.25	85.44	7.34	1.14	IK
XPZWDF	X	67.67	-1.39	-0.26	71.87	-6.23	-0.96	TA

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

WebCode	Data Flag	Sample SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
YEFQBA		75.80	6.74	1.28	90.93	12.83	1.99	XX
YKY36C		61.22	-7.83	-1.49	66.57	-11.54	-1.79	ID
ZG2GWR	*	67.25	-1.81	-0.34	64.97	-13.13	-2.03	LA
ZKHDLA		67.52	-1.54	-0.29	74.72	-3.38	-0.52	LH

Summary Statistics			
	Sample SF59		Sample SF60
Grand Means	69.059 Joules/sq m		78.101 Joules/sq m
SD Btw Labs	5.269 Joules/sq m		6.457 Joules/sq m
Statistics based on 42 of 47 reporting participants			

Comments on assigned Data Flags for Test #327

- 6J2RNP (X) - Data appear to be off by a factor of 1/10; data converted by CTS (x10).
- Q7QVWE (X) - Extreme data.
- RXY4ZT (X) - Inconsistent in testing between samples, data for Sample SF60 are low.
- UPYME7 (X) - Extreme data.
- XPZWDF (X) - Data appears to be transposed between samples. Data switched by CTS.

Analysis Notes:

LGA8W4 - Data appear to be reported as ft-lb/sq ft, not in-lb/sq in as indicated on datasheet. Unit changed by CTS.

Instrument Code List

- | | |
|---|---|
| (ID) - Instron 4201 | (IK) - Instron 4400 Series |
| (IM) - Instron 5500 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 |
| (TA) - Thwing-Albert | (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) | (VM) - Valmet PaperLab (was Kajaani/Robotest) |
| (XX) - Instrument make/model not specified by lab | |

TAPPI-CTS Interlaboratory Testing Program

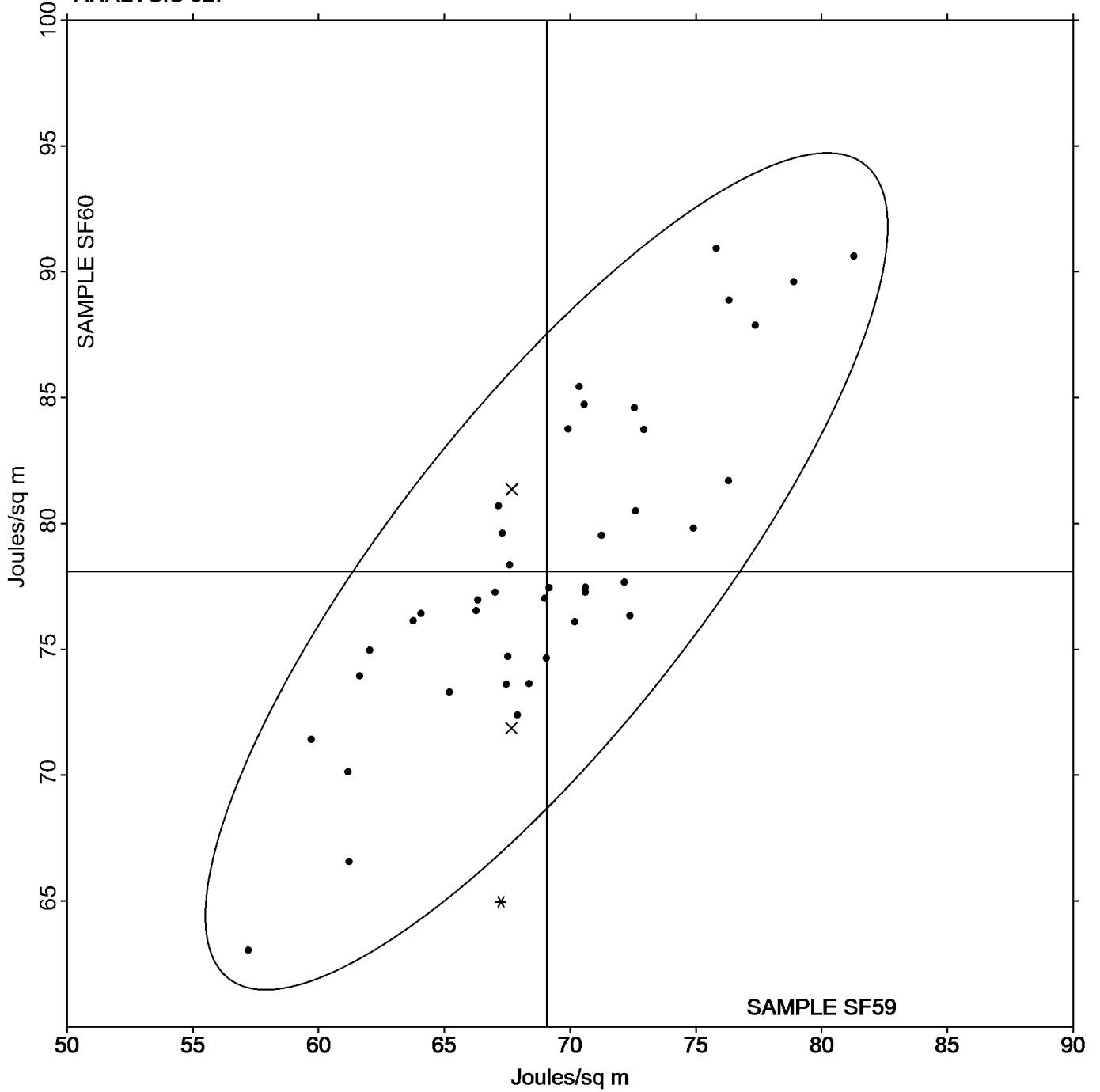
Analysis 327

Tensile Energy Absorption - Printing Papers

Grand Mean Sample **SF59** = 69.059 Joules/sq m

Grand Mean Sample **SF60** = 78.101 Joules/sq m

ANALYSIS 327



TAPPI-CTS Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

WebCode	Data Flag	Sample SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
22F2XE		1.950	0.007	0.05	2.180	0.078	0.44	TJ
2MRWNX		1.901	-0.042	-0.27	1.985	-0.117	-0.65	LH
2RKZEF		1.786	-0.157	-1.01	1.825	-0.277	-1.55	LH
3VG9UB		1.888	-0.055	-0.35	1.960	-0.142	-0.79	LH
3W3DDB		1.966	0.024	0.15	1.920	-0.181	-1.02	TX
62KUCP		2.242	0.299	1.93	2.534	0.433	2.42	IK
62VBWC		2.196	0.254	1.64	2.386	0.284	1.59	ID
6FBDCE		1.876	-0.067	-0.43	2.077	-0.025	-0.14	LH
6NNVQZ	X	25.450	23.507	151.66	25.031	22.929	128.31	TB
6WMMLV	X	4.041	2.098	13.54	4.407	2.305	12.90	TP
7EJGQ7		1.823	-0.120	-0.77	1.950	-0.152	-0.85	LH
8FQXBN		1.760	-0.183	-1.18	1.830	-0.272	-1.52	LI
8P2YWP		1.680	-0.263	-1.69	1.820	-0.282	-1.58	LH
AFXHU4		1.882	-0.061	-0.39	1.987	-0.115	-0.64	LI
AQRWE8		1.700	-0.243	-1.57	1.911	-0.191	-1.07	LH
AZ6MKX		1.997	0.054	0.35	2.117	0.015	0.09	LH
BGQQHD	X	2.326	0.383	2.47	2.616	0.514	2.88	VM
BUQENL		2.182	0.239	1.54	2.203	0.101	0.57	TO
CVL3W9		1.906	-0.037	-0.24	2.138	0.036	0.20	LI
ETBLPU	X	1.480	-0.463	-2.99	1.600	-0.502	-2.81	TJ
EYZJ3J		1.868	-0.075	-0.48	1.999	-0.103	-0.57	LX
G77C24		1.974	0.031	0.20	2.208	0.106	0.59	XX
G99CV9		1.900	-0.043	-0.28	1.950	-0.152	-0.85	TF
GF8JDA		1.976	0.033	0.21	2.196	0.094	0.53	LA
GHDAV7		1.862	-0.081	-0.52	1.829	-0.273	-1.53	RE
H448F2		1.995	0.052	0.34	2.077	-0.025	-0.14	LH
HHMWD		1.788	-0.155	-1.00	2.055	-0.047	-0.26	LH
HM69WY	*	1.670	-0.273	-1.76	2.060	-0.042	-0.23	XX
JC6M3T		1.810	-0.133	-0.86	2.040	-0.062	-0.35	IM
KCK8GN	X	2.260	0.317	2.05	1.950	-0.152	-0.85	TF
KFW8JH		2.217	0.274	1.77	2.300	0.198	1.11	IK
KHLMQ6		2.081	0.138	0.89	2.262	0.160	0.90	LH
KTF7LB		2.158	0.215	1.39	2.324	0.222	1.24	XX
KUTFYH		1.791	-0.152	-0.98	1.996	-0.106	-0.59	LH
L9UWVG		1.968	0.025	0.16	2.056	-0.046	-0.26	TI
LTJFLU		1.767	-0.176	-1.13	1.879	-0.223	-1.25	MR
M3KLB9	*	2.094	0.151	0.98	2.466	0.364	2.04	TF
MFBBAE		2.018	0.075	0.49	2.203	0.101	0.57	RE
N8XLAL		1.907	-0.036	-0.23	2.175	0.073	0.41	TB
NJKEDE		2.074	0.131	0.85	2.257	0.155	0.87	TB
QPRB3K		1.854	-0.089	-0.57	2.042	-0.060	-0.33	LH
QRJ67F		1.917	-0.026	-0.17	2.205	0.103	0.58	TO
QZXEZA		1.863	-0.080	-0.51	2.049	-0.053	-0.30	LH

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

WebCode	Data Flag	Sample SF59			Sample SF60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RVQ7BH	X	3.013	1.070	6.91	3.342	1.240	6.94	TO
UNBCAD		2.306	0.363	2.34	2.476	0.374	2.09	IM
VB6HGF		2.325	0.382	2.47	2.450	0.348	1.95	IA
W8HHFQ		1.911	-0.032	-0.20	1.996	-0.106	-0.59	KA
WTV68W		2.022	0.079	0.51	2.210	0.108	0.61	TB
WWQQBE		1.835	-0.108	-0.69	1.930	-0.172	-0.96	LH
WXGYAH		1.924	-0.019	-0.12	2.008	-0.094	-0.52	LI
YE9RVE		1.862	-0.081	-0.52	1.971	-0.130	-0.73	ID
YJ77H4		2.027	0.084	0.54	2.238	0.136	0.76	XX
YQYYHC		1.860	-0.083	-0.53	2.066	-0.036	-0.20	LI
ZC4ET7		2.000	0.057	0.37	2.180	0.078	0.44	IM
ZM6NQG		1.834	-0.109	-0.70	2.008	-0.094	-0.52	LX
ZZK6MY	X	2.640	0.697	4.50	2.829	0.727	4.07	XX

		Summary Statistics			
		Sample SF59		Sample SF60	
Grand Means		1.9427	Percent	2.1017	Percent
SD Btwn Labs		0.1550	Percent	0.1787	Percent
Statistics based on 49 of 56 reporting participants					

Comments on assigned Data Flags for Test #328

- 6NNVQZ (X) - Extreme data.
- 6WMMLV (X) - Extreme data.
- BGQQHD (X) - Systematic error (data for both samples are high).
- ETBLPU (X) - Systematic error (data for both samples are low).
- KCK8GN (X) - Inconsistent in testing between samples and within the determinations for Sample SF59.
- RVQ7BH (X) - Extreme data.
- ZZK6MY (X) - Systematic error (data for both samples are high).

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

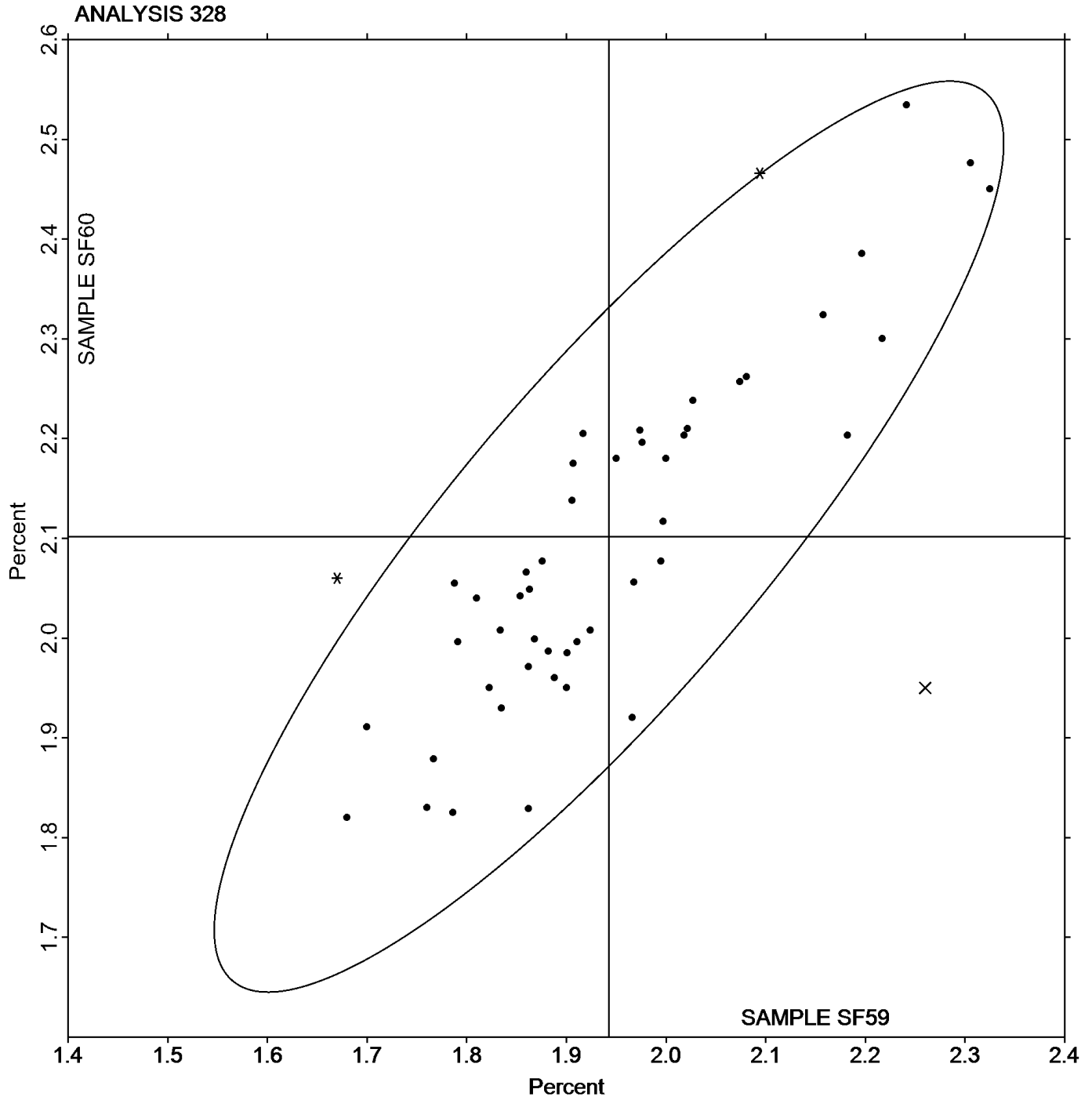
Instrument Code List

(IA) - Instron 1011	(ID) - Instron 4201
(IK) - Instron 4400 Series	(IM) - Instron 5500
(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 **SF59** = 1.9427 Percent

Grand Mean Sample **SF60** = 2.1017 Percent



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

WebCode	Data Flag	Sample SE59			Sample SE60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MQ9ZR		8.579	0.109	0.22	8.862	0.093	0.23	IK
33WHZD		8.320	-0.150	-0.30	8.700	-0.070	-0.17	TP
3MWUED		9.087	0.617	1.24	9.383	0.614	1.50	TO
64LVZF		8.361	-0.110	-0.22	8.815	0.045	0.11	LH
7HFEPX		8.551	0.081	0.16	8.777	0.008	0.02	TA
83FWAX		8.392	-0.078	-0.16	8.765	-0.005	-0.01	TO
8CLTEN		8.654	0.183	0.37	9.006	0.236	0.58	ID
8HAKJW		8.129	-0.342	-0.69	8.485	-0.285	-0.70	IX
A79PBR		8.832	0.361	0.73	8.697	-0.073	-0.18	LH
AGD7HV		9.023	0.552	1.11	9.240	0.470	1.15	TE
AXA636		9.415	0.945	1.90	9.716	0.946	2.31	TP
BFEUC9		8.434	-0.036	-0.07	8.701	-0.069	-0.17	TB
BY94DV		7.861	-0.609	-1.23	8.247	-0.523	-1.28	XX
CND4JW	X	7.782	-0.688	-1.39	7.369	-1.400	-3.42	SA
DVGEKM		8.157	-0.313	-0.63	8.491	-0.278	-0.68	RE
ERPNTP		8.434	-0.036	-0.07	8.669	-0.101	-0.25	TB
EVTCCCK		8.543	0.073	0.15	9.032	0.262	0.64	XX
FP7G77		8.077	-0.393	-0.79	8.372	-0.398	-0.97	LH
GCGW7A		9.235	0.765	1.54	9.600	0.830	2.02	LH
HN3Y4M		7.828	-0.642	-1.29	8.341	-0.429	-1.05	IF
JVVRPL		8.546	0.076	0.15	8.779	0.009	0.02	ID
K23QNH	X	8.194	-0.276	-0.56	7.785	-0.984	-2.40	IF
KL2MWP		8.669	0.199	0.40	8.716	-0.054	-0.13	LW
KRDRBQ		8.620	0.150	0.30	8.673	-0.097	-0.24	TO
LNZXXC		8.632	0.162	0.33	8.799	0.029	0.07	TB
LPWF7T	*	9.438	0.967	1.95	9.175	0.405	0.99	TK
NV9VEA		8.702	0.231	0.47	8.983	0.213	0.52	SP
RE7C43		8.533	0.062	0.13	9.119	0.349	0.85	TP
RGTV6Z		9.009	0.538	1.08	9.184	0.414	1.01	TH
RY4239		8.613	0.142	0.29	9.086	0.316	0.77	XX
TKQQ8Y		8.809	0.338	0.68	8.844	0.074	0.18	TO
TVJBBJ		7.215	-1.255	-2.53	7.758	-1.012	-2.47	TK
UQPVEA		8.770	0.299	0.60	8.840	0.070	0.17	IM
UTATM8		8.218	-0.252	-0.51	8.837	0.067	0.16	LW
V2PJ8R		8.412	-0.058	-0.12	8.973	0.203	0.50	LH
V2T448		7.504	-0.966	-1.95	8.041	-0.728	-1.78	IA
VRA33B		8.138	-0.332	-0.67	8.744	-0.026	-0.06	TO
VZULTB		7.978	-0.492	-0.99	8.519	-0.251	-0.61	XX
WQL9DR		7.588	-0.882	-1.78	8.026	-0.744	-1.81	IK
XUUQD2		7.981	-0.490	-0.99	8.210	-0.560	-1.37	IM
YEBDQU		8.348	-0.122	-0.25	8.420	-0.350	-0.85	TO
Z8D97G		9.182	0.711	1.43	9.167	0.397	0.97	LA

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

	Sample SE59	Summary Statistics	Sample SE60
Grand Means	8.4704 kN/m		8.7698 kN/m
SD Btwn Labs	0.4966 kN/m		0.4098 kN/m
Statistics based on 40 of 42 reporting participants			

Comments on assigned Data Flags for Test #330

CND4JW (X) - Inconsistent in testing between samples, data for Sample SE60 are low.

K23QNH (X) - Inconsistent in testing between samples.

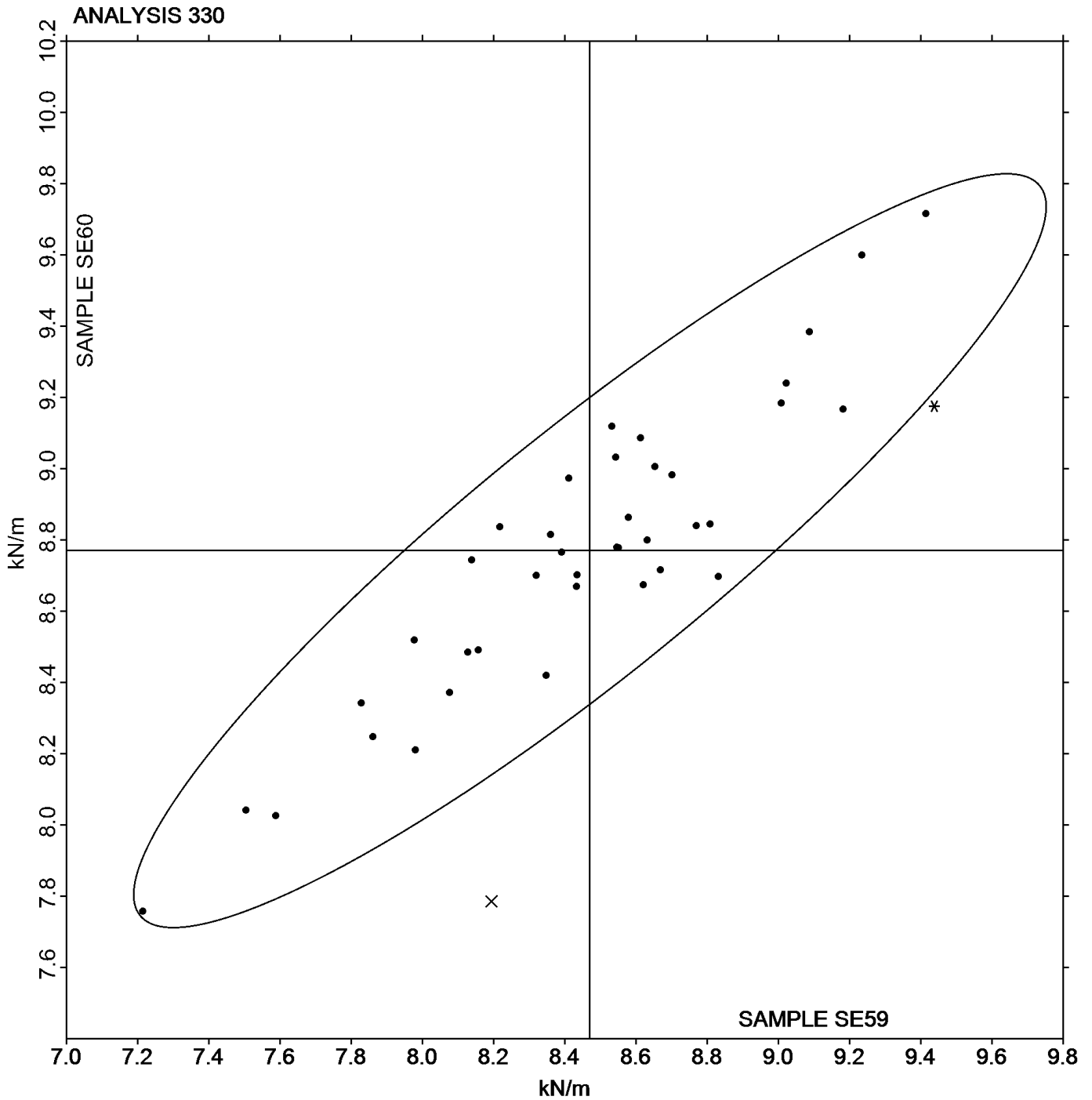
Instrument Code List

- | | |
|---|---|
| (IA) - Instron 1011 | (ID) - Instron 4201 |
| (IF) - Instron 3340 Series | (IK) - Instron 4400 Series |
| (IM) - Instron 5500 Series | (IX) - Instron (model not specified) |
| (LA) - L & W Autoline | (LH) - L & W Alwetron TH1 (Horizontal) SE 060 |
| (LW) - L & W Tensile Tester SE062 | (RE) - Regmed |
| (SA) - Shimadzu Autograph AG 2000 A | (SP) - Schopper Type Tensile Tester (TMI) |
| (TA) - Thwing-Albert Tensile Tester | (TB) - Thwing-Albert EJA/1000 |
| (TE) - Thwing-Albert Intellect II | (TH) - Thwing-Albert QC-3A |
| (TK) - Thwing-Albert Model 37-4 | (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 330
Tensile Breaking Strength - Packaging Papers

Grand Mean Sample **SE59** = 8.4704 kN/m

Grand Mean Sample **SE60** = 8.7698 kN/m



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

WebCode	Data Flag	Sample SE59			Sample SE60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36MFVY		105.2	-14.2	-1.17	68.93	-27.41	-2.16	IF
4TLGEC		115.3	-4.1	-0.34	97.20	0.86	0.07	TP
6Z6FPN		142.7	23.3	1.92	119.63	23.29	1.84	IK
78JLYZ		118.3	-1.1	-0.09	103.72	7.38	0.58	XX
8UP6C7		132.6	13.1	1.08	109.09	12.75	1.01	TO
9B7RZ2	*	109.0	-10.4	-0.86	62.70	-33.64	-2.65	SA
AMU4XW		124.9	5.5	0.45	105.08	8.74	0.69	TO
B7C6HV		127.1	7.7	0.63	111.79	15.45	1.22	TE
EUYKJD		132.7	13.2	1.09	102.30	5.96	0.47	XX
FG6MY2		134.8	15.4	1.27	106.25	9.91	0.78	TO
FJUZGJ		111.6	-7.9	-0.65	96.35	0.01	0.00	XX
FUW97G		103.8	-15.6	-1.29	82.50	-13.84	-1.09	IM
FWJWVN		115.1	-4.4	-0.36	100.87	4.53	0.36	IA
JNBPD		112.4	-7.1	-0.58	95.88	-0.46	-0.04	TO
JU8D83		113.1	-6.3	-0.52	102.10	5.76	0.45	LH
JUAY3J		114.9	-4.6	-0.38	97.84	1.50	0.12	IA
K88LDJ		117.8	-1.6	-0.14	90.54	-5.80	-0.46	IX
LCPEPG		122.0	2.6	0.21	89.66	-6.68	-0.53	TB
LDQLBN		117.9	-1.6	-0.13	91.77	-4.57	-0.36	LW
LUQ8LG		119.2	-0.2	-0.02	86.69	-9.65	-0.76	LH
M77DAH		92.1	-27.3	-2.25	71.01	-25.33	-2.00	TB
PHTAKE		123.9	4.4	0.37	98.98	2.64	0.21	IM
QHMGZC		109.9	-9.5	-0.79	94.97	-1.37	-0.11	RE
QN6QB2		126.8	7.4	0.61	102.60	6.26	0.49	TO
R2PPEA		110.2	-9.3	-0.76	97.60	1.26	0.10	LW
RLHCGQ		144.7	25.3	2.09	104.14	7.80	0.62	LA
UC2P89		113.8	-5.6	-0.46	96.32	-0.02	0.00	XX
UUCQKT		112.3	-7.1	-0.59	96.23	-0.11	-0.01	LH
WFZVRW		139.6	20.2	1.66	111.12	14.78	1.17	TH
WUW74G	X	77.1	-42.4	-3.49	61.64	-34.70	-2.74	TP

Sample SE59		Summary Statistics		Sample SE60	
Grand Means	119.43 Joules/sq m			96.340 Joules/sq m	
SD Btw Labs	12.13 Joules/sq m			12.680 Joules/sq m	
Statistics based on 29 of 30 reporting participants					

Comments on assigned Data Flags for Test #331

WUW74G (X) - Systematic error (data for both samples are low).

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

Analysis Notes:

M77DAH - Data appear to be reported as kg-m/sq m, not in-lb/sq in as indicated on datasheet. Unit changed by CTS.

QN6QB2 - Data appear to be reported as ft-lb/sq ft, not in-lb/sq in as indicated on datasheet. Unit changed by CTS.

Instrument Code List

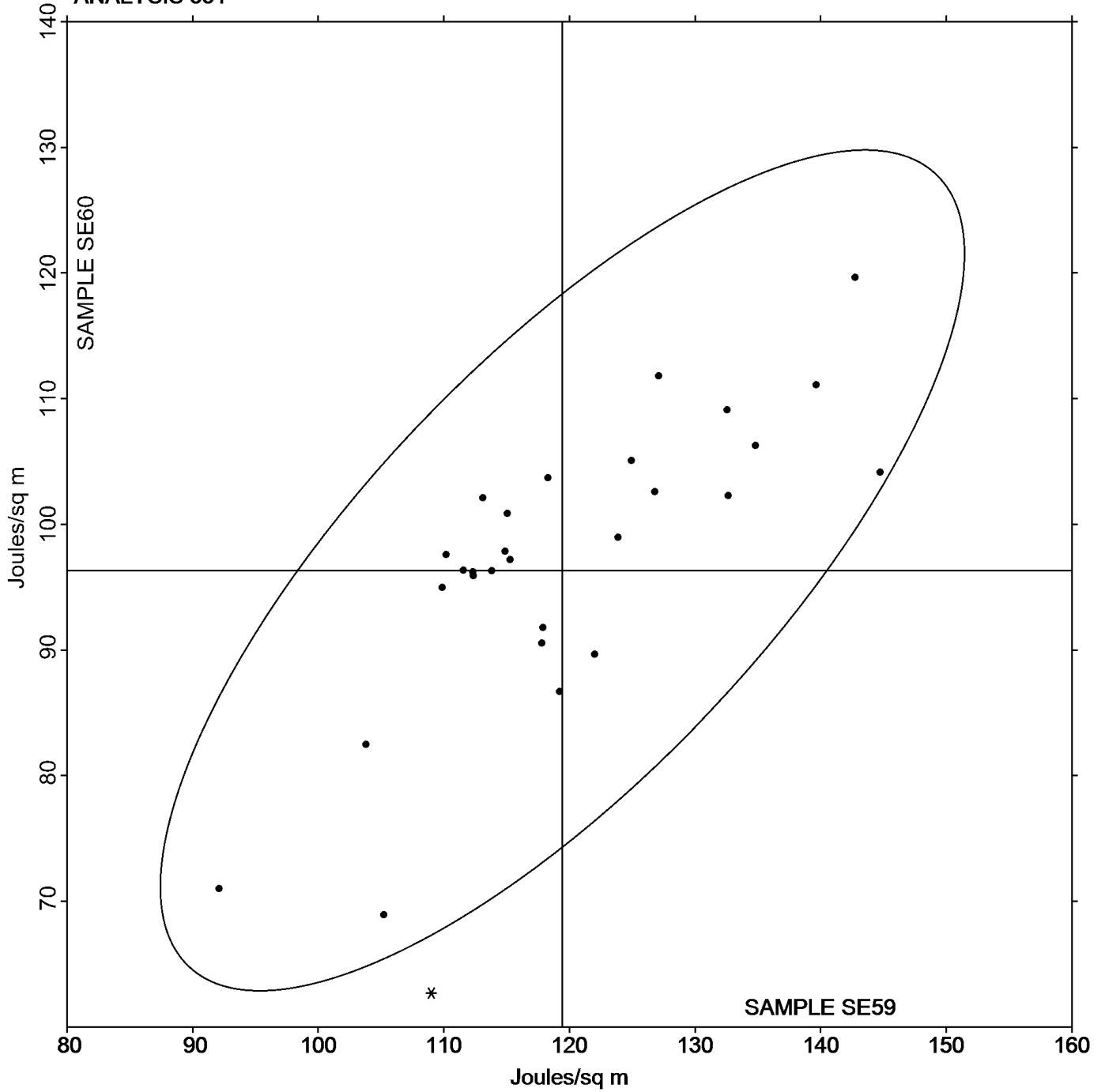
(IA) - Instron 1011	(IF) - Instron 3340 Series
(IK) - Instron 4400 Series	(IM) - Instron 5500 Series
(IX) - Instron (model not specified)	(LA) - L & W Autoline
(LH) - L & W Alwetron TH1 (Horizontal) SE 060	(LW) - L & W Tensile Tester SE062
(RE) - Regmed	(SA) - Shimadzu Autograph AG 2000 A
(TB) - Thwing-Albert EJA/1000	(TE) - Thwing-Albert Intelect II
(TH) - Thwing-Albert QC-3A	(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 331
Tensile Energy Absorption - Packaging Papers

Grand Mean Sample **SE59** = 119.43 Joules/sq m

Grand Mean Sample **SE60** = 96.340 Joules/sq m

ANALYSIS 331



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

WebCode	Data Flag	Sample SE59			Sample SE60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2UVXTX		2.063	-0.109	-0.61	1.628	-0.091	-0.51	TB
3DT464		2.016	-0.156	-0.88	1.572	-0.147	-0.82	LW
4MD46T		2.243	0.071	0.40	1.818	0.099	0.55	IM
6BUYPF	X	2.688	0.516	2.90	2.325	0.606	3.37	TP
6YKHUW		2.235	0.063	0.35	1.847	0.128	0.71	RE
6ZZLNN		2.457	0.285	1.60	1.958	0.239	1.33	TH
7Y72PW		2.321	0.149	0.84	1.846	0.127	0.70	IA
9BTQEX		2.310	0.138	0.78	2.000	0.281	1.56	TE
ABWEMN		1.919	-0.253	-1.42	1.606	-0.113	-0.63	xx
AZMBYC		1.983	-0.189	-1.06	1.607	-0.112	-0.62	LH
BVRN2H		2.540	0.368	2.07	2.083	0.364	2.03	IK
CBWX24		2.522	0.350	1.97	2.110	0.391	2.17	TP
CWGV LZ		2.386	0.214	1.20	1.973	0.254	1.41	TH
D9M9DK		2.184	0.012	0.07	1.706	-0.013	-0.07	XX
DC6MND		2.250	0.078	0.44	1.818	0.099	0.55	IM
EDMCWQ		2.128	-0.044	-0.25	1.572	-0.147	-0.82	TB
EK7DLF	X	2.512	0.340	1.91	2.451	0.732	4.07	TO
ENVQG6		2.245	0.073	0.41	1.628	-0.091	-0.51	LA
EQD4NL		1.970	-0.202	-1.14	1.580	-0.139	-0.77	XX
FDARE7		1.969	-0.203	-1.14	1.664	-0.055	-0.31	LH
FN9PYK		1.983	-0.189	-1.06	1.411	-0.308	-1.71	IF
G9YJLL		1.830	-0.342	-1.92	1.474	-0.245	-1.36	XX
HZUVVM		2.261	0.089	0.50	1.820	0.101	0.56	TO
K99JEL		2.101	-0.071	-0.40	1.686	-0.033	-0.19	XX
KTY YRF		2.010	-0.162	-0.91	1.500	-0.219	-1.22	XX
PDWLTL	*	2.178	0.006	0.03	1.426	-0.293	-1.63	SA
PNUM7Q		2.311	0.139	0.78	1.829	0.110	0.61	TO
Q4XKK8		1.978	-0.194	-1.09	1.638	-0.081	-0.45	LW
RKT2PX		2.210	0.038	0.21	1.690	-0.029	-0.16	XX
VV2G2R		2.245	0.073	0.41	1.750	0.031	0.17	LH
W6Z69A		2.172	0.000	0.00	1.641	-0.078	-0.44	IX
WD9Q8C		1.978	-0.194	-1.09	1.572	-0.147	-0.82	TO
WH7489		2.307	0.135	0.76	1.774	0.055	0.30	TB
WZAQN9		2.200	0.028	0.16	1.790	0.071	0.39	IA

		Summary Statistics	
	Sample SE59		Sample SE60
Grand Means	2.1720 Percent		1.7193 Percent
SD Btw Labs	0.1777 Percent		0.1798 Percent
Statistics based on 32 of 34 reporting participants			

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

Comments on assigned Data Flags for Test #332

6BUYPF (X) - Systematic error (data for both samples are high).

EK7DLF (X) - Inconsistent in testing between samples, data for Sample SE60 are high; and within the determinations for Sample SE60.

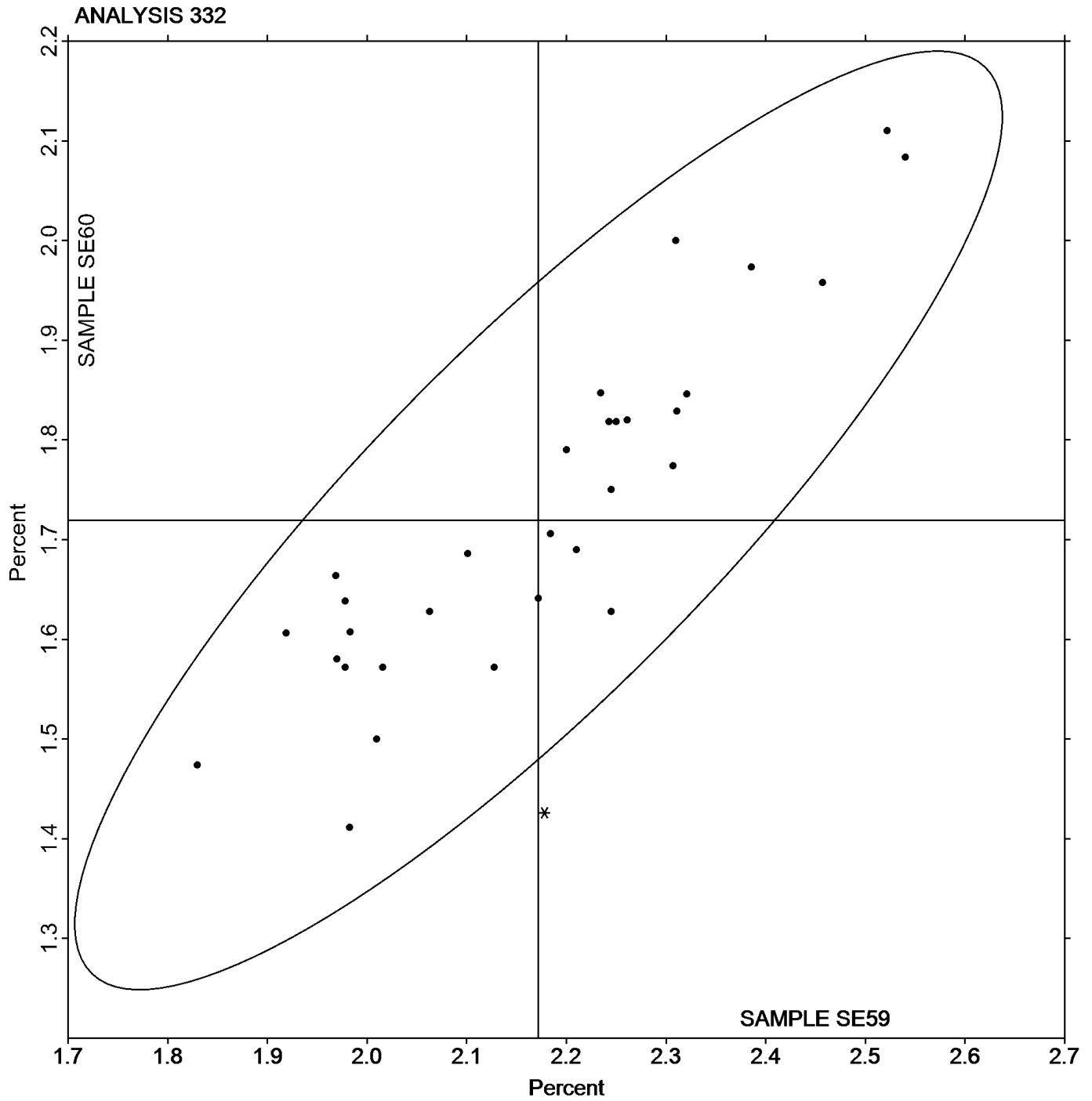
Instrument Code List

(IA) - Instron 1011	(IF) - Instron 3340 Series
(IK) - Instron 4400 Series	(IM) - Instron 5500 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
(RE) - Regmed	(SA) - Shimadzu Autograph AG 2000 A
(TB) - Thwing-Albert EJA/1000	(TE) - Thwing-Albert Intellect II
(TH) - Thwing-Albert QC-3A	(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

Grand Mean Sample **SE59** = 2.1720 Percent

Grand Mean Sample **SE60** = 1.7193 Percent



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

WebCode	Data Flag	Sample SG59			Sample SG60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26NLH7		70.80	3.93	0.32	86.70	-0.41	-0.02	MT
2PLL8J		69.30	2.43	0.20	68.80	-18.31	-1.10	MT
2QVMWX		65.00	-1.87	-0.15	66.80	-20.31	-1.22	XX
3PC9Z9		51.20	-15.67	-1.29	58.11	-28.99	-1.74	MT
44RKVE		83.40	16.53	1.36	81.00	-6.11	-0.37	MT
8JPK4L		53.60	-13.27	-1.09	111.20	24.09	1.45	MT
99LUR3		46.50	-20.37	-1.67	77.20	-9.91	-0.60	MT
9MEUY4		75.30	8.43	0.69	105.50	18.39	1.11	XX
AKQ78G		52.10	-14.77	-1.21	84.10	-3.01	-0.18	MT
BR273Y		85.30	18.43	1.51	99.50	12.39	0.75	MT
FUP8YV		67.80	0.93	0.08	96.60	9.49	0.57	MT
HUPUZK		82.60	15.73	1.29	85.90	-1.21	-0.07	MT
JC6X2X		77.20	10.33	0.85	67.90	-19.21	-1.15	MT
KAYDRB		63.60	-3.27	-0.27	89.90	2.79	0.17	MT
L3B34X		82.60	15.73	1.29	108.80	21.69	1.30	MT
N3DW4N		67.00	0.13	0.01	80.50	-6.61	-0.40	MT
TFV6BQ		59.90	-6.97	-0.57	71.30	-15.81	-0.95	MT
VTHF6K		51.20	-15.67	-1.29	114.70	27.59	1.66	MT
VZW7NQ		66.20	-0.67	-0.06	100.50	13.39	0.81	MT

		Summary Statistics	
	Sample SG59		Sample SG60
Grand Means	66.874 Double Folds		87.106 Double Folds
SD Btwn Labs	12.182 Double Folds		16.631 Double Folds
Statistics based on 19 of 19 reporting participants			

Notes for Analysis 334

No Data Flags assigned for this analysis.

Instrument Code List

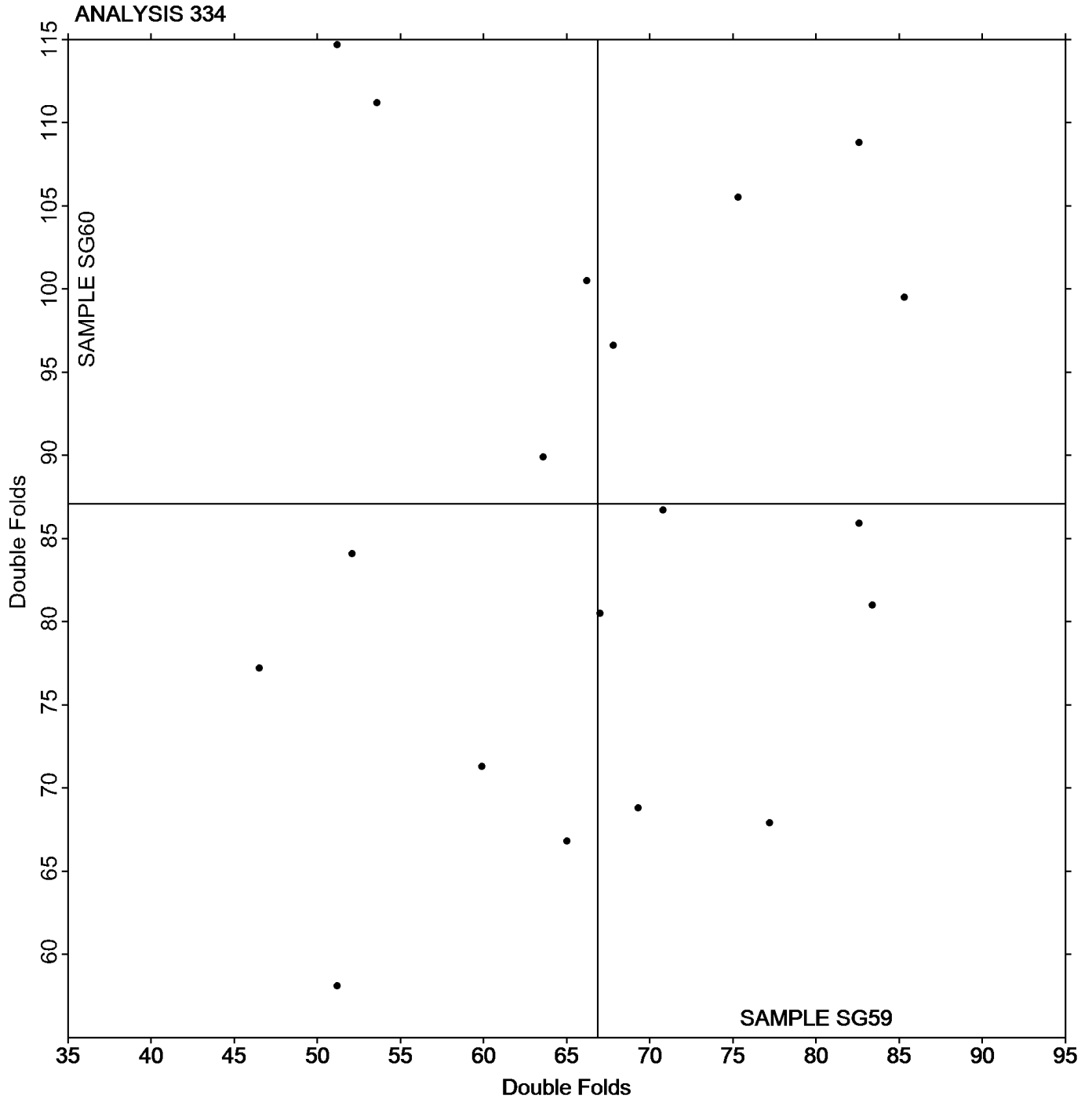
(MT) - MIT - Tinius Olsen

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

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

Grand Mean Sample **SG59** = 66.874 Double Folds

Grand Mean Sample **SG60** = 87.106 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 SH59			Sample SH60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3PETWN		244.5	1.0	0.05	264.0	0.4	0.02
8KARRM		257.1	13.6	0.67	268.0	4.4	0.23
9NX99Z		209.4	-34.1	-1.68	232.9	-30.8	-1.62
9PLDDK	*	232.0	-11.4	-0.56	230.7	-33.0	-1.74
AEYBGP		254.3	10.8	0.53	280.0	16.4	0.86
B46PA6		220.0	-23.4	-1.16	250.3	-13.4	-0.71
BAAYAZ		213.6	-29.9	-1.48	243.1	-20.6	-1.09
FJXF9C		261.7	18.3	0.90	292.0	28.4	1.50
FNWTUF		291.1	47.7	2.35	311.1	47.5	2.51
GKLUTY		201.4	-42.1	-2.08	224.0	-39.6	-2.09
H2XH6R		253.8	10.3	0.51	282.6	18.9	1.00
KXC3VG		256.9	13.4	0.66	273.8	10.1	0.54
M7VWQ		224.2	-19.3	-0.95	264.8	1.2	0.06
NRQ2R2		254.8	11.3	0.56	268.0	4.4	0.23
PGWDUC	X	184.9	-58.6	-2.89	187.6	-76.1	-4.02
QELCAK		229.2	-14.3	-0.70	262.5	-1.2	-0.06
RA4EF3		233.0	-10.5	-0.52	254.0	-9.7	-0.51
UCLTXE		234.5	-9.0	-0.44	256.9	-6.8	-0.36
UFLQ6F		242.6	-0.8	-0.04	262.8	-0.8	-0.04
X3QEJ7		262.3	18.8	0.93	279.1	15.5	0.82
X923E2		248.4	4.9	0.24	269.1	5.4	0.29
XPk23L		248.0	4.6	0.22	266.7	3.0	0.16
YYCJNY		263.6	20.1	0.99	264.5	0.8	0.04
Z6BFYJ		247.5	4.1	0.20	262.0	-1.7	-0.09
ZEUGVD		238.9	-4.6	-0.23	255.7	-7.9	-0.42
ZKWP6M		264.0	20.5	1.01	272.8	9.1	0.48

		Summary Statistics	
	Sample SH59		Sample SH60
Grand Means	243.47 Gurley Units		263.67 Gurley Units
SD Btwn Labs	20.27 Gurley Units		18.93 Gurley Units
Statistics based on 25 of 26 reporting participants			

Comments on assigned Data Flags for Test #336

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

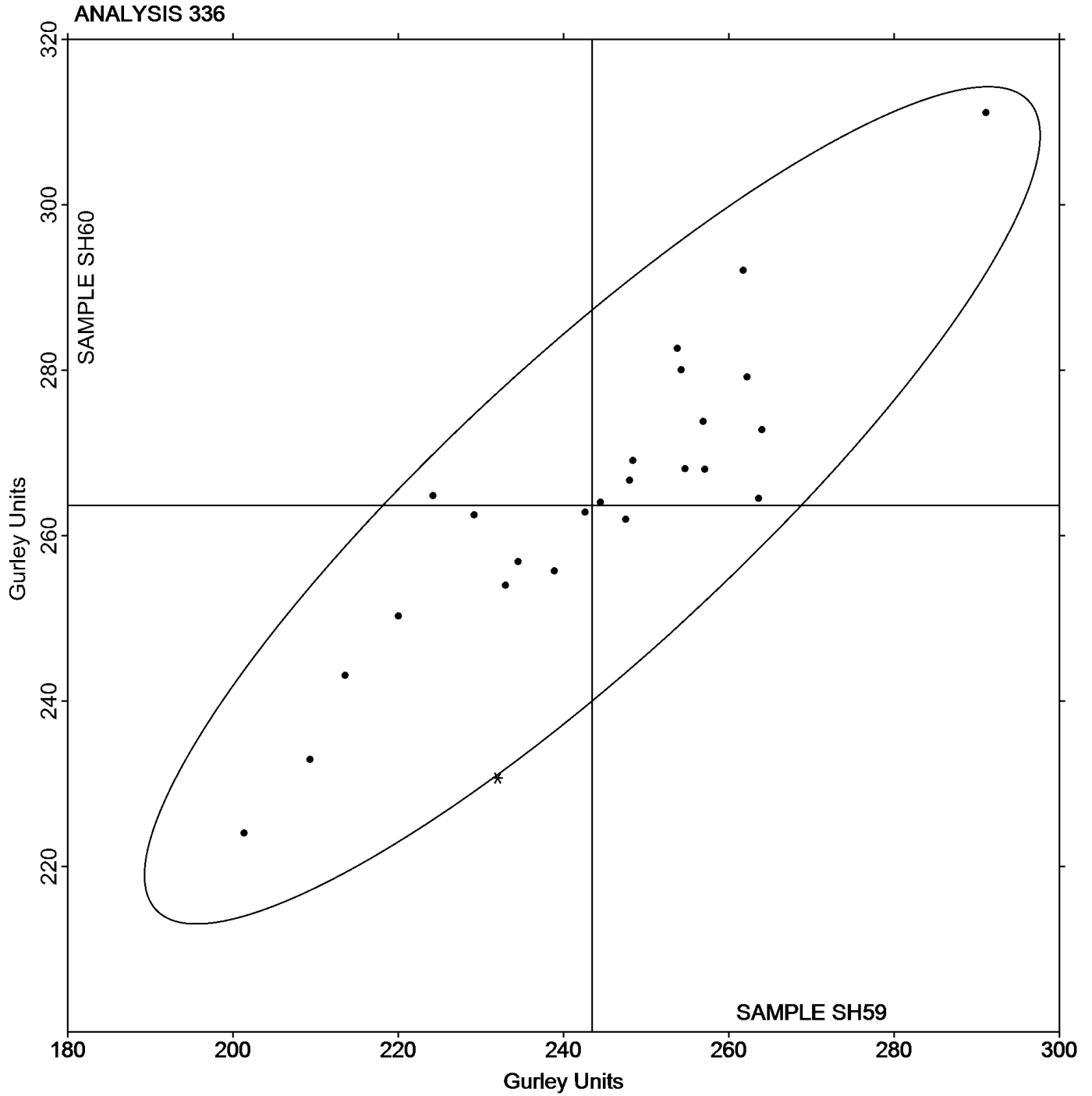
Analysis Notes:

H2XH6R - One determination removed from the Lab Mean of Sample SH59 per Grubb's Test at 1% risk (TAPPI 1205).

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

Grand Mean Sample **SH59** = 243.47 Gurley Units

Grand Mean Sample **SH60** = 263.67 Gurley Units



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

WebCode	Data Flag	Sample SJ59			Sample SJ60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
7FGDK2		3.276	-0.115	-0.52	3.734	-0.020	-0.08
887KBB		2.901	-0.490	-2.23	3.388	-0.366	-1.43
8FBERQ		3.420	0.029	0.13	3.940	0.186	0.73
8XJD6E	X	2.427	-0.964	-4.38	2.784	-0.971	-3.80
BH43KN		3.347	-0.044	-0.20	3.696	-0.058	-0.23
BXD2DT		3.620	0.229	1.04	4.150	0.396	1.55
EECUQB		3.502	0.111	0.50	3.593	-0.161	-0.63
FX4L8G		3.479	0.088	0.40	4.187	0.433	1.69
GRQN9E	X	4.029	0.638	2.90	4.442	0.688	2.69
KG7JLQ		3.506	0.115	0.52	3.806	0.052	0.20
KLRUM4		3.122	-0.269	-1.22	3.394	-0.360	-1.41
LQBLQN		3.650	0.259	1.18	4.070	0.316	1.23
U6E4J9		3.594	0.203	0.92	3.773	0.018	0.07
UTX8EC		3.220	-0.171	-0.78	3.560	-0.194	-0.76
VDL8ZQ		3.123	-0.268	-1.22	3.442	-0.312	-1.22
WW94WJ	X	2.776	-0.615	-2.79	3.051	-0.703	-2.75
XMA4P4		3.509	0.118	0.54	3.825	0.071	0.28
Z93DQN		3.593	0.202	0.92	3.758	0.004	0.01

Summary Statistics	
Sample SJ59	Sample SJ60
Grand Means	3.3908 Taber Units
SD Btwn Labs	0.2201 Taber Units
	3.7544 Taber Units
	0.2557 Taber Units
Statistics based on 15 of 18 reporting participants	

Comments on assigned Data Flags for Test #338

8XJD6E (X) - Systematic error (data for both samples are low).

GRQN9E (X) - Systematic error (data for both samples are high).

WW94WJ (X) - Systematic error (data for both samples are low).

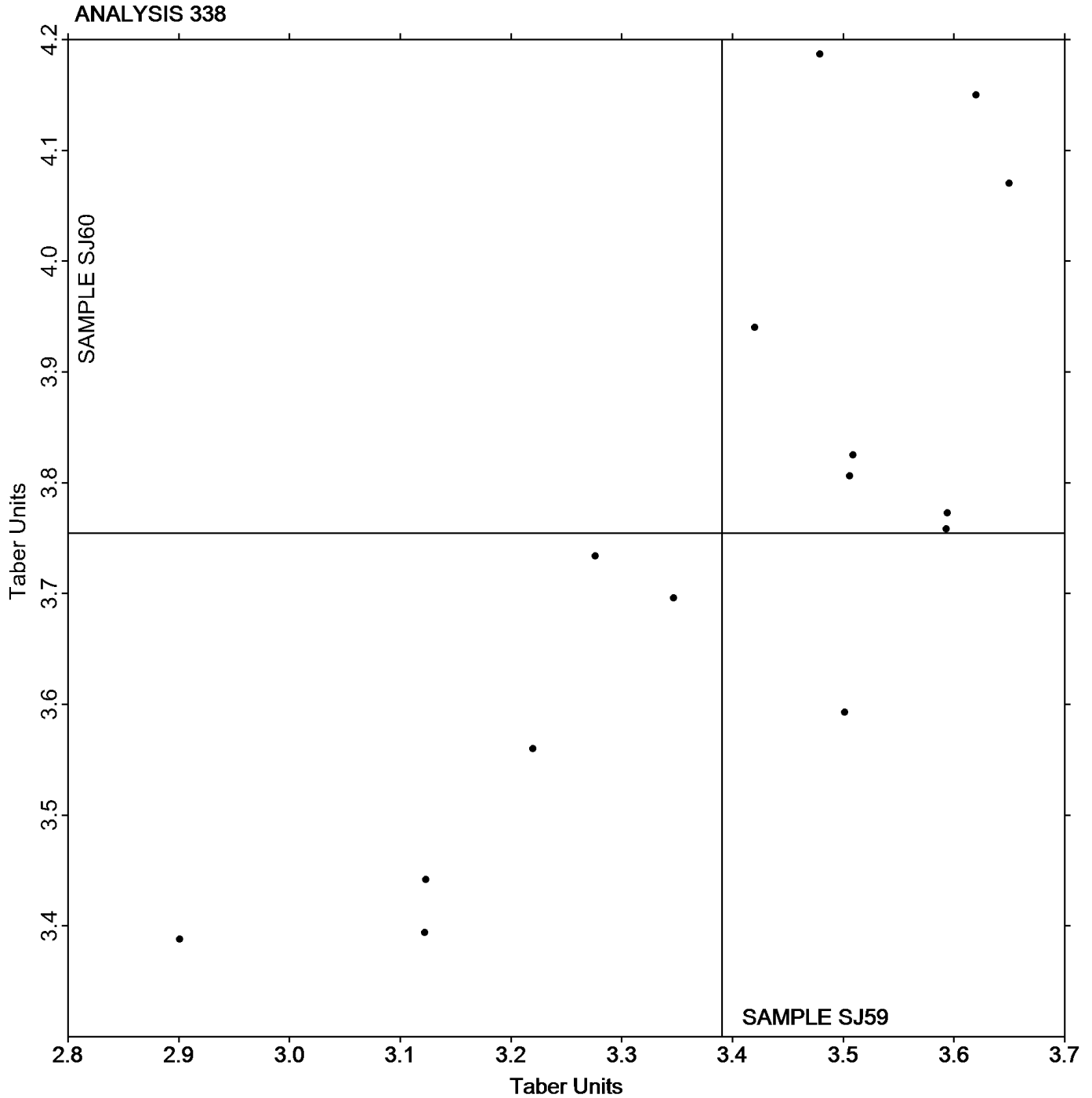
Analysis Notes:

887KBB - Data appear to be off by a factor of 10; data converted by CTS (/10).

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

Grand Mean Sample **SJ59** = 3.3908 Taber Units

Grand Mean Sample **SJ60** = 3.7544 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 SQ59			Sample SQ60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6DXU8X		19.15	-0.78	-0.82	38.30	-0.35	-0.17
7TQYYR		19.80	-0.13	-0.13	38.70	0.05	0.02
83UHN2		21.34	1.41	1.49	41.61	2.96	1.43
8F6AU2		21.50	1.57	1.65	41.75	3.10	1.50
D3AJ7J		19.70	-0.23	-0.24	38.95	0.30	0.14
LJTUFV		20.05	0.12	0.13	34.73	-3.92	-1.90
M2UBL2		18.51	-1.42	-1.49	36.43	-2.22	-1.08
NBKP4J		20.93	1.00	1.06	39.28	0.63	0.30
Q68QMA	X	57.00	37.07	38.96	86.20	47.55	23.06
VR376R		19.60	-0.33	-0.35	37.11	-1.54	-0.75
WBYNCZ		19.29	-0.64	-0.67	38.74	0.09	0.04
XVGH2Y		19.32	-0.61	-0.64	39.57	0.92	0.45

Sample SQ59		Summary Statistics	Sample SQ60	
Grand Means	19.926 Taber Units		38.652 Taber Units	
SD Btwn Labs	0.952 Taber Units		2.062 Taber Units	
Statistics based on 11 of 12 reporting participants				

Comments on assigned Data Flags for Test #339

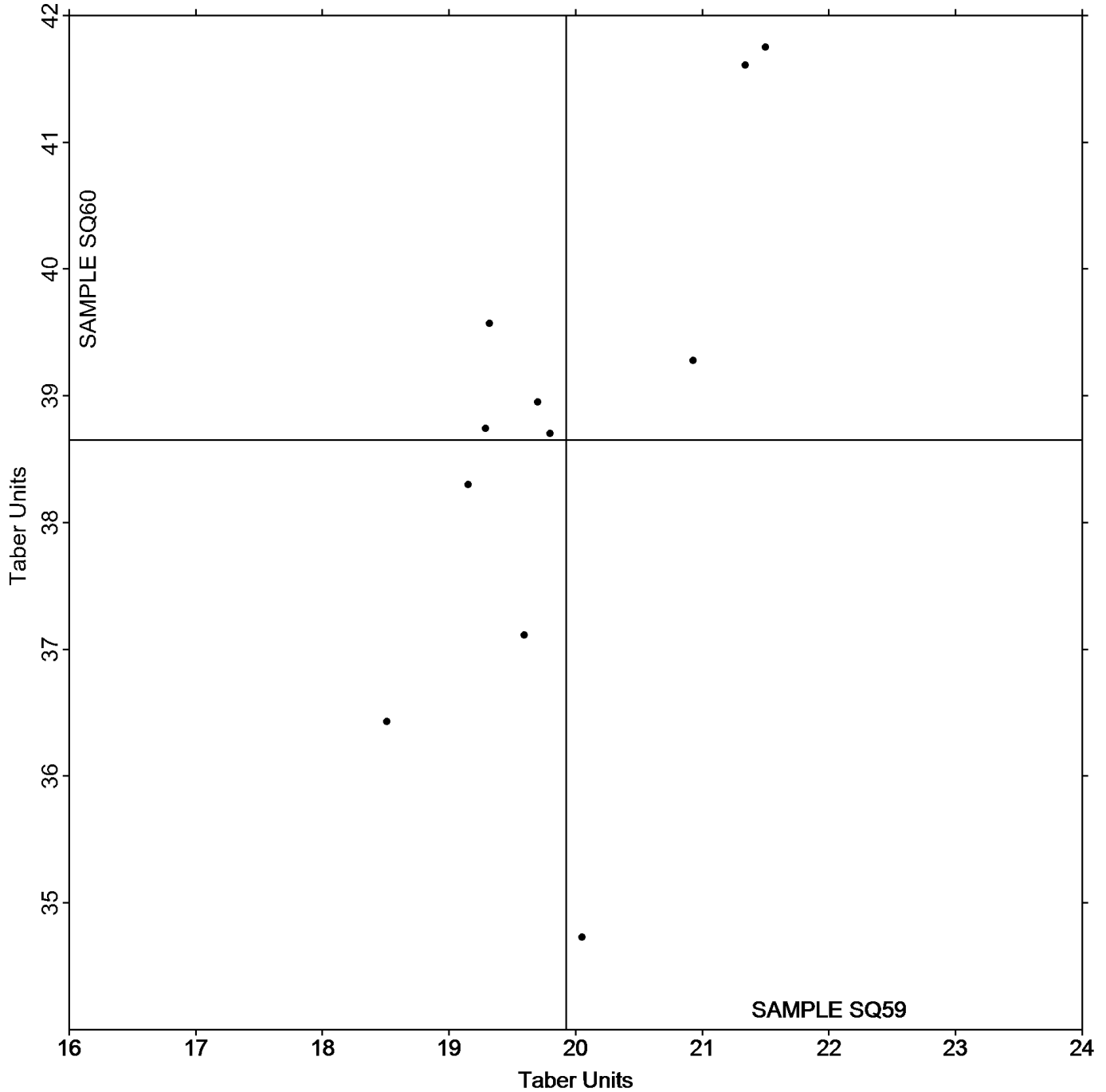
Q68QMA (X) - Extreme data.

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

Grand Mean Sample **SQ59** = 19.926 Taber Units

Grand Mean Sample **SQ60** = 38.652 Taber Units

ANALYSIS 339



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 ST59			Sample ST60		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YGJCY		216.9	9.9	1.18	253.6	7.9	0.86
6Z38K6		192.3	-14.7	-1.75	224.0	-21.7	-2.37
7CC4ZR		200.8	-6.2	-0.74	241.0	-4.7	-0.51
8BUM7B		219.8	12.8	1.53	259.4	13.7	1.49
ATMVA6		216.1	9.2	1.10	254.8	9.1	0.99
BN4F6Z		204.3	-2.6	-0.31	244.9	-0.8	-0.08
C9UZQB		204.5	-2.5	-0.30	238.5	-7.2	-0.78
DEVL4W		208.4	1.4	0.17	252.8	7.1	0.78
EKHREC		198.8	-8.2	-0.97	248.5	2.8	0.31
ENCY8K		203.5	-3.5	-0.41	242.0	-3.7	-0.40
GURB9Q		212.8	5.9	0.70	258.1	12.4	1.36
HAYML2	X	41.6	-165.4	-19.75	49.3	-196.3	-21.39
J3E3WU		214.6	7.7	0.92	244.1	-1.6	-0.17
JAD2EN		216.5	9.5	1.14	250.0	4.3	0.47
KJ3KFN		201.5	-5.5	-0.65	248.4	2.7	0.30
QBPRGM		214.1	7.1	0.85	251.8	6.1	0.67
QDK22P		211.5	4.5	0.54	255.2	9.5	1.04
XDGA3Z		208.1	1.1	0.14	237.8	-7.9	-0.86
XJDVNN		205.8	-1.2	-0.14	238.9	-6.8	-0.74
YHDCX7		198.8	-8.2	-0.97	235.6	-10.1	-1.10
Z4ZA4N		190.1	-16.9	-2.01	234.3	-11.4	-1.24

Sample ST59		Summary Statistics	Sample ST60	
Grand Means	206.95 Taber Units		245.68 Taber Units	
SD Btwn Labs	8.37 Taber Units		9.18 Taber Units	
Statistics based on 20 of 21 reporting participants				

Comments on assigned Data Flags for Test #340

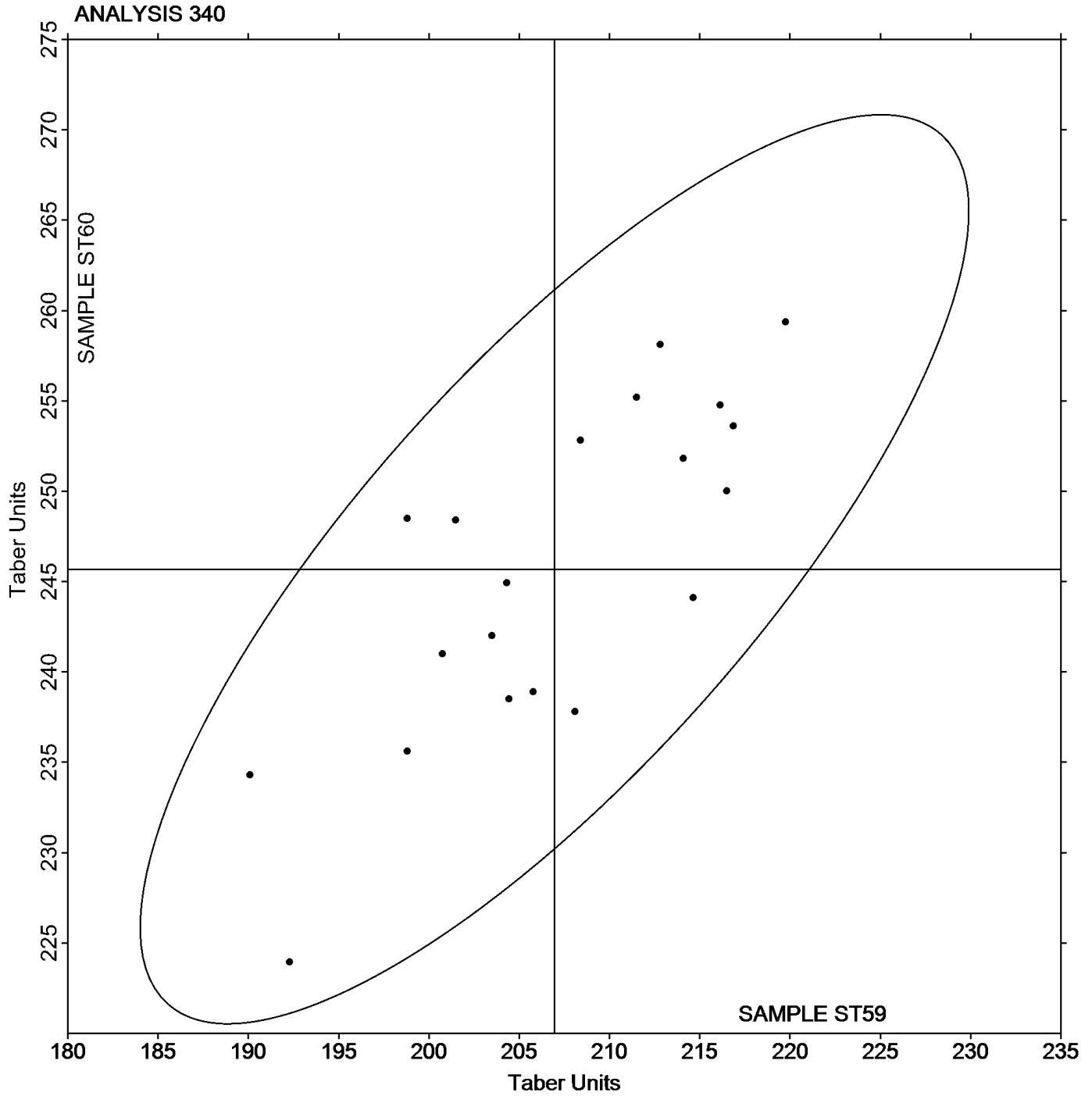
HAYML2 (X) - Extreme data.

TAPPI-CTS Interlaboratory Testing Program Analysis 340

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

Grand Mean Sample **ST59** = 206.95 Taber Units

Grand Mean Sample **ST60** = 245.68 Taber Units



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

WebCode	Data Flag	Sample SM59			Sample SM60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HBZCR		51.57	-2.81	-0.40	54.99	0.51	0.06	TA
48R22G		51.11	-3.27	-0.46	51.80	-2.67	-0.33	TZ
4W3VN6		52.48	-1.90	-0.27	49.96	-4.51	-0.55	LW
6DN78D		57.42	3.04	0.43	59.20	4.73	0.58	XX
6DZKAZ		44.12	-10.27	-1.44	45.30	-9.17	-1.12	TZ
6NDYM9		52.15	-2.23	-0.31	50.10	-4.37	-0.54	TZ
C9NMMR		45.28	-9.10	-1.28	39.78	-14.69	-1.80	TZ
CAANE3		60.60	6.22	0.87	62.80	8.33	1.02	CA
DUQ4TU		49.31	-5.07	-0.71	48.39	-6.09	-0.75	LW
FUML4F		63.72	9.34	1.31	64.22	9.74	1.19	TA
FXNLML	X	34.26	-20.13	-2.83	31.26	-23.22	-2.85	XX
JARA2C		47.00	-7.38	-1.04	45.00	-9.47	-1.16	CA
K733Y3		66.72	12.34	1.74	62.58	8.11	0.99	TL
NTYMAV		51.24	-3.14	-0.44	54.56	0.09	0.01	DT
XB4JCQ		58.88	4.50	0.63	61.48	7.01	0.86	LW
XZJWKA		64.12	9.74	1.37	66.96	12.49	1.53	CD

		Summary Statistics			
		Sample SM59		Sample SM60	
Grand Means		54.382 psi		54.474 psi	
SD Btwn Labs		7.111 psi		8.155 psi	
Statistics based on 15 of 16 reporting participants					

Comments on assigned Data Flags for Test #343

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

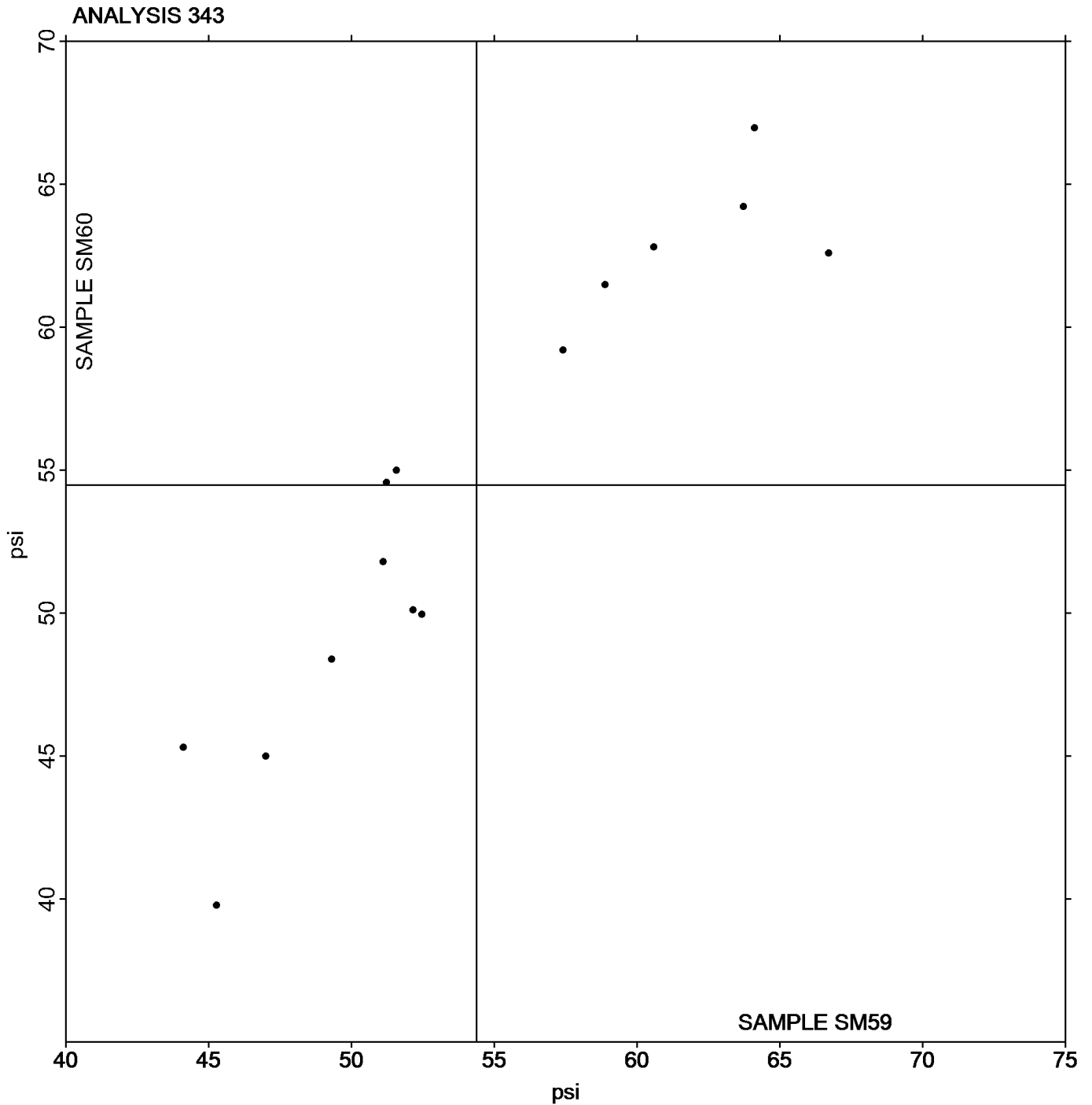
Instrument Code List

- | | |
|-------------------------------------|---|
| (CA) - CSI CS-163 | (CD) - CSI CS-163D |
| (DT) - Dek-Tron DCS-163A ZDT Tester | (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 **SM59** = 54.382 psi

Grand Mean Sample **SM60** = 54.474 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 SZ59			Sample SZ60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36WKX2		57.96	-0.18	-0.05	41.42	-0.32	-0.14	DP
3V9C74		57.53	-0.60	-0.16	39.96	-1.77	-0.79	LW
6ANDBG	X	49.52	-8.62	-2.25	49.68	7.94	3.55	TL
74YBPW		48.64	-9.50	-2.48	37.94	-3.80	-1.70	TZ
7DPAG9	*	61.38	3.24	0.85	46.94	5.20	2.33	PG
7LB2L7		61.90	3.76	0.98	43.00	1.26	0.57	TZ
AGMEWV		58.32	0.18	0.05	41.20	-0.54	-0.24	LW
CTWYYV		64.10	5.96	1.56	44.70	2.96	1.33	CD
DML9WN		62.00	3.86	1.01	42.80	1.06	0.48	CA
F4AMJP		58.34	0.20	0.05	41.38	-0.36	-0.16	TL
GZL8DA		60.00	1.86	0.49	43.20	1.46	0.66	CA
HZFD89		54.60	-3.54	-0.93	39.00	-2.74	-1.22	CA
MCT3ZU		61.00	2.86	0.75	40.60	-1.14	-0.51	CA
PAKP7P		56.40	-1.74	-0.45	41.16	-0.58	-0.26	CA
TPXFDL		56.20	-1.94	-0.51	41.20	-0.54	-0.24	CA
VQ3T3Q		53.40	-4.73	-1.24	39.80	-1.94	-0.87	LW
WPMUGG	X	44.04	-14.10	-3.69	37.35	-4.39	-1.96	TZ
X479GZ		58.42	0.28	0.07	43.46	1.72	0.77	TL

Sample SZ59		Summary Statistics	Sample SZ60	
Grand Means	58.137 psi		41.735 psi	
SD Btwn Labs	3.823 psi		2.235 psi	
Statistics based on 16 of 18 reporting participants				

Comments on assigned Data Flags for Test #345

6ANDBG (X) - Inconsistent in testing between samples, data for Sample SZ60 are high.

WPMUGG (X) - Inconsistent in testing between samples, data for Sample SZ59 are low.

Instrument Code List

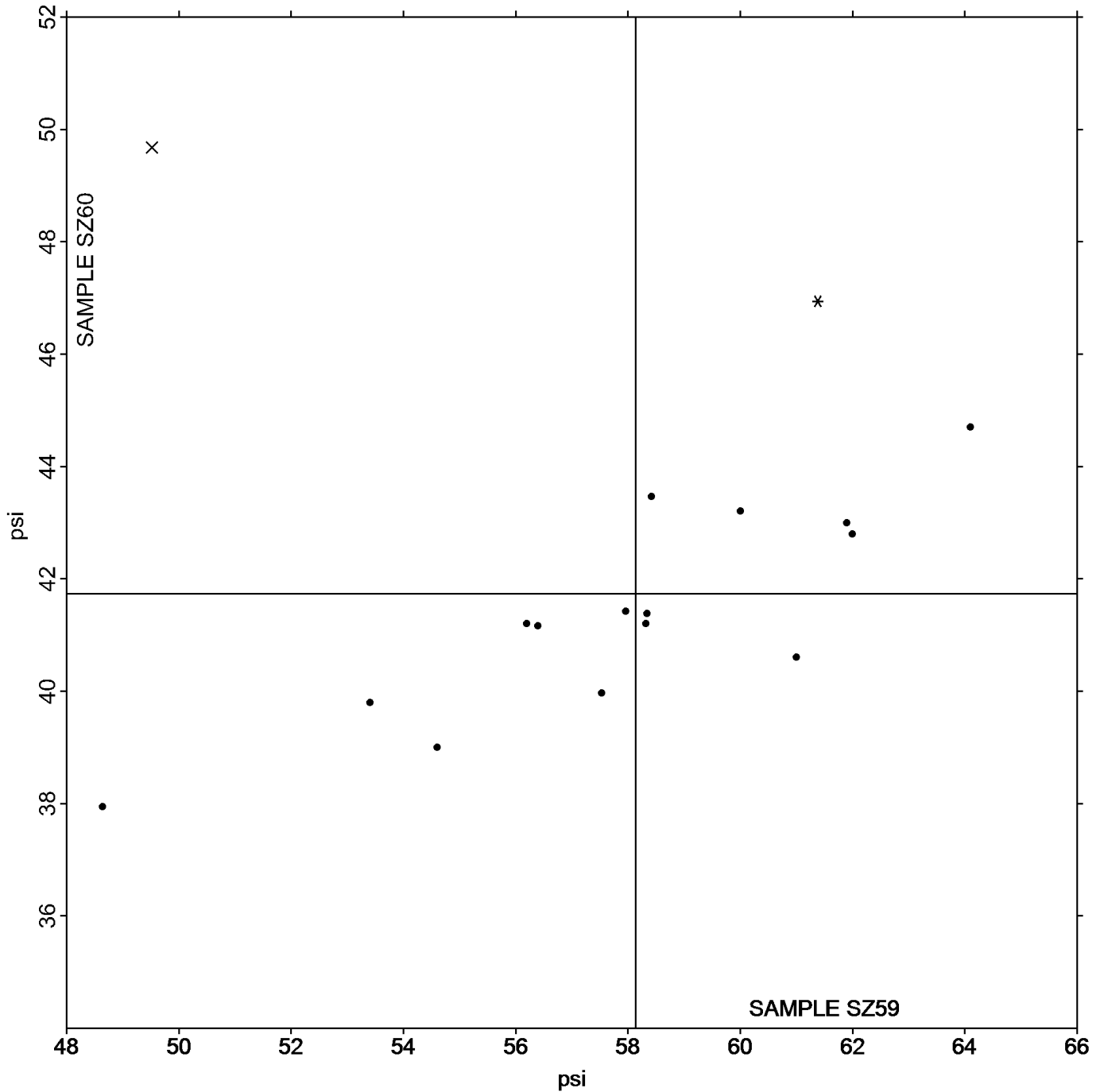
- | | |
|--------------------------------------|--------------------------------|
| (CA) - CSI CS-163 | (CD) - CSI CS-163D |
| (DP) - Dek-Tron XP Series | (LW) - L & W ZD Tensile Tester |
| (PG) - Perkins Model A Mullen Tester | (TL) - TMI Lab Master |
| (TZ) - TMI Monitor/ZDT Tester | |

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

Grand Mean Sample **SZ59** = 58.137 psi

Grand Mean Sample **SZ60** = 41.735 psi

ANALYSIS 345



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 SN59			Sample SN60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36JTF7	X	61.68	-21.22	-3.86	43.36	-23.65	-5.35	HZ
6BWRHM		82.00	-0.90	-0.16	69.80	2.79	0.63	HZ
BAHCCA		81.75	-1.15	-0.21	69.00	1.99	0.45	HY
FAAGKR		86.60	3.70	0.67	69.40	2.39	0.54	HZ
FFY2LL		92.80	9.90	1.80	67.60	0.59	0.13	HZ
FL9ZUC		80.20	-2.70	-0.49	66.20	-0.81	-0.18	HY
HWDB98		73.60	-9.30	-1.69	59.40	-7.61	-1.72	HZ
M3XA6V		76.20	-6.70	-1.22	59.80	-7.21	-1.63	HY
MLXAFT	X	120.80	37.90	6.90	61.20	-5.81	-1.31	XX
MTJXJC		87.00	4.10	0.75	72.00	4.99	1.13	HY
MYQJBF		79.09	-3.81	-0.69	65.19	-1.82	-0.41	HY
P7ED6P		80.44	-2.46	-0.45	71.92	4.91	1.11	HY
PQ8Z6K		81.20	-1.70	-0.31	67.20	0.19	0.04	HY
R4D7NG		79.60	-3.30	-0.60	66.20	-0.81	-0.18	HY
R4RVC2		86.00	3.10	0.57	71.40	4.39	0.99	HY
T8B6H7		80.00	-2.90	-0.53	64.80	-2.21	-0.50	HY
T9GQVK		90.00	7.10	1.29	70.40	3.39	0.77	XX
U9X8KC		87.08	4.18	0.76	70.52	3.51	0.79	HY
UR9V2Q		79.00	-3.90	-0.71	61.80	-5.21	-1.18	HY
V74THF		84.80	1.90	0.35	62.20	-4.81	-1.09	HY
VFGJN6		81.20	-1.70	-0.31	63.40	-3.61	-0.82	XX
VNKC82		96.60	13.70	2.50	72.40	5.39	1.22	HY
YDGN7D		85.80	2.90	0.53	75.20	8.19	1.85	HY
ZPAKRC		79.40	-3.50	-0.64	64.20	-2.81	-0.64	HY
ZVVERP		76.28	-6.62	-1.20	61.24	-5.77	-1.31	HY

Sample SN59		Summary Statistics	Sample SN60	
Grand Means	82.897 1000th ft-lbs		67.012 1000th ft-lbs	
SD Btwn Labs	5.492 1000th ft-lbs		4.421 1000th ft-lbs	
Statistics based on 23 of 25 reporting participants				

Comments on assigned Data Flags for Test #348

36JTF7 (X) - Extreme data.

MLXAFT (X) - Extreme data for Sample SN59.

Analysis Notes:

BAHCCA - One determination removed from the Lab Mean of Sample SN60 per Grubb's Test at 1% risk (TAPPI 1205).

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

Instrument Code List

(HY) - Huygen Digitized Scott Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress

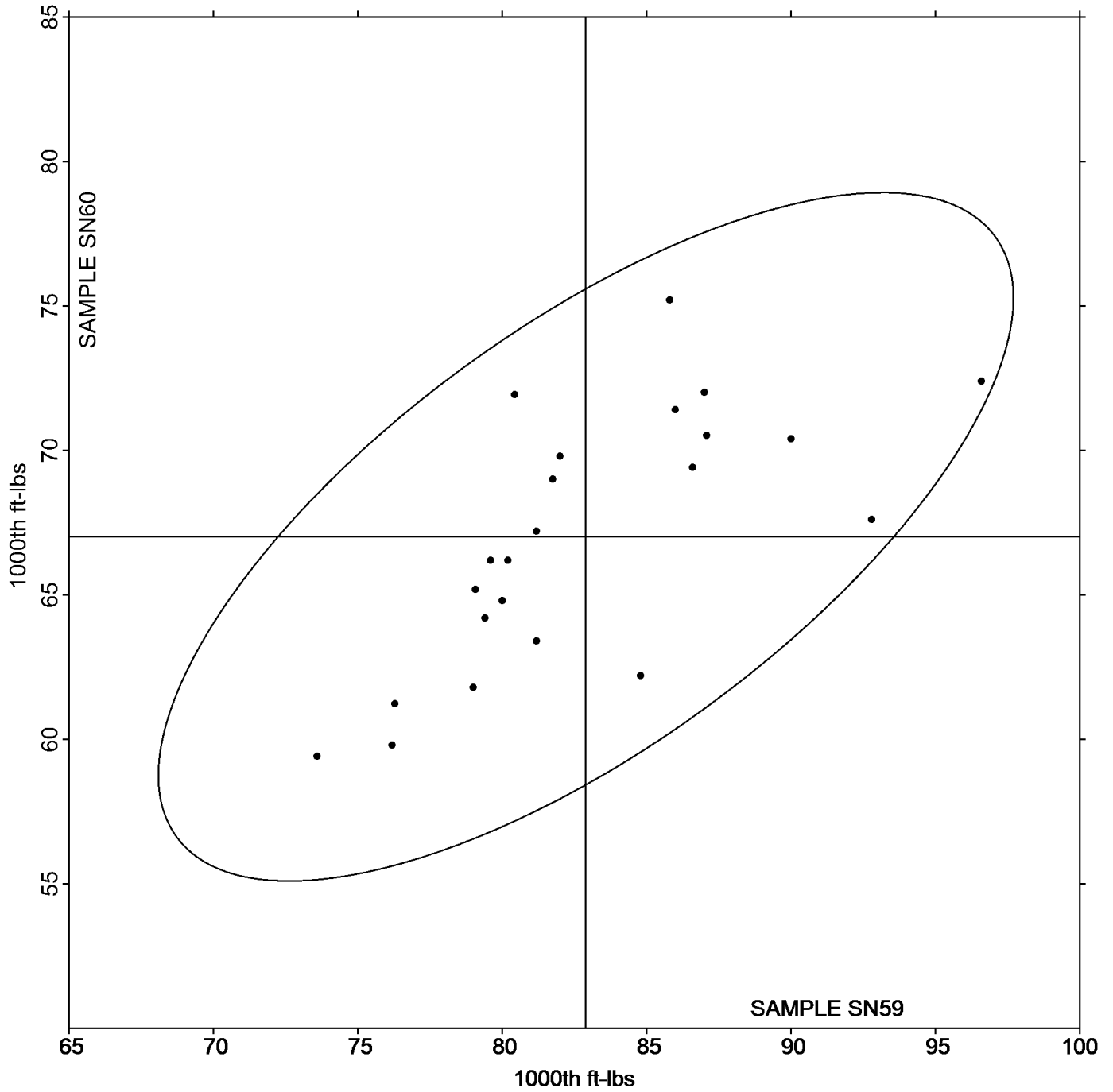
(XX) - Instrument make/model not specified by lab

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

Grand Mean Sample **SN59** = 82.897 1000th ft-lbs

Grand Mean Sample **SN60** = 67.012 1000th ft-lbs

ANALYSIS 348



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

WebCode	Data Flag	Sample SP59			Sample SP60			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3DYUFF		73.73	5.94	0.66	57.21	5.05	0.56	TM
6FNFVZ		65.80	-1.99	-0.22	43.80	-8.35	-0.92	SC
8BN272		71.60	3.81	0.43	66.80	14.65	1.62	TM
9TTQF7		59.20	-8.59	-0.96	43.00	-9.15	-1.01	TM
A8ZUWC		53.49	-14.30	-1.60	38.16	-13.99	-1.54	TM
DFNHQ6		65.60	-2.19	-0.24	50.60	-1.55	-0.17	SC
NVWWR4		61.20	-6.59	-0.74	49.20	-2.95	-0.33	SC
RHWQBV		67.40	-0.39	-0.04	53.20	1.05	0.12	TM
TP8JNY		82.00	14.21	1.59	57.00	4.85	0.53	SC
V3AKP8		63.67	-4.12	-0.46	48.92	-3.24	-0.36	XX
VZVWCF		82.00	14.21	1.59	65.80	13.65	1.51	SC

Sample SP59		Summary Statistics	Sample SP60	
Grand Means	67.789 1000th ft-lbs		52.153 1000th ft-lbs	
SD Btwn Labs	8.952 1000th ft-lbs		9.065 1000th ft-lbs	
Statistics based on 11 of 11 reporting participants				

Notes for Analysis 349

No Data Flags assigned for this analysis.

Instrument Code List

(SC) - Scott Internal Bond Tester (Manual)

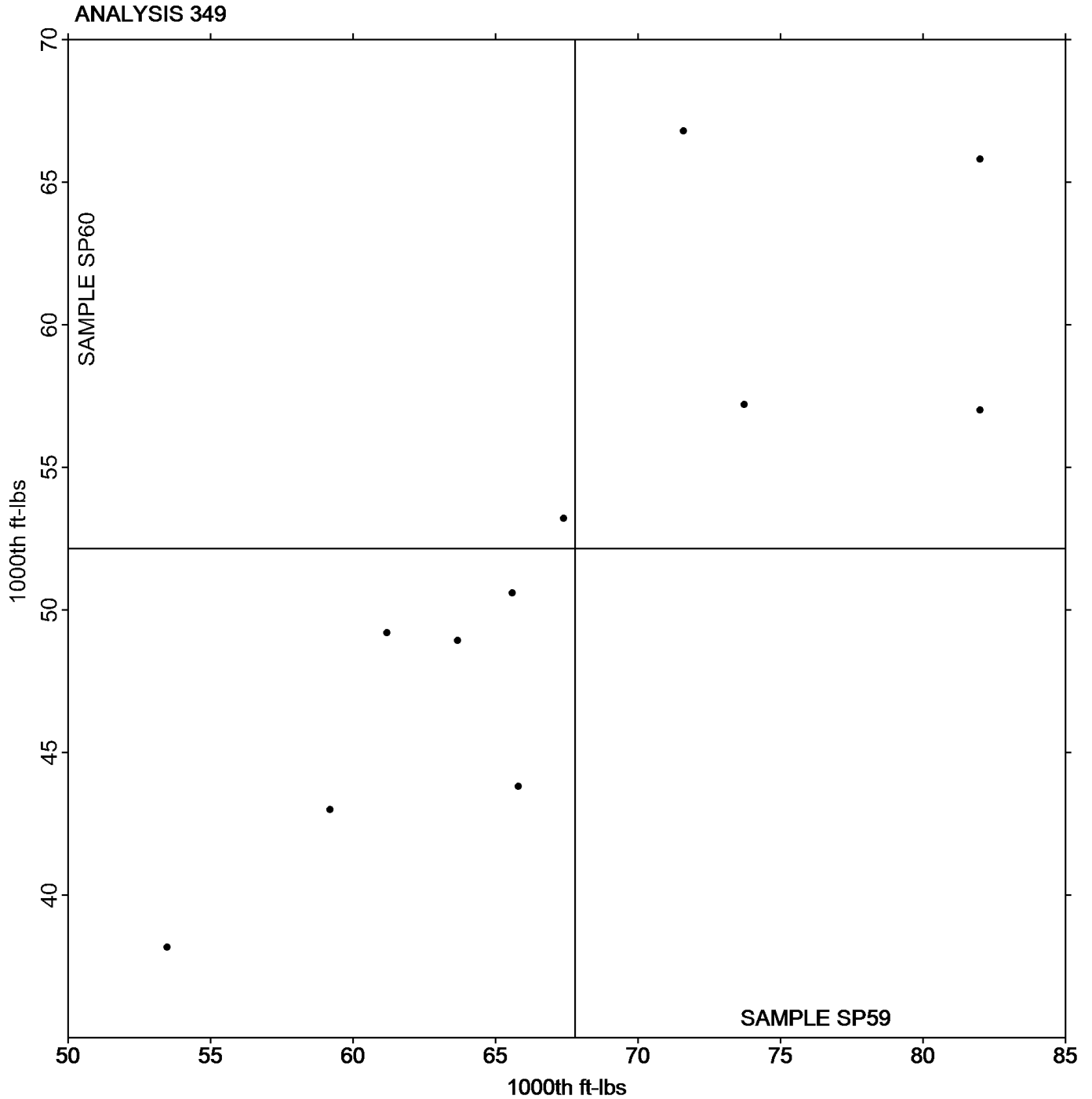
(TM) - TMI Monitor/Internal Bond Tester

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

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

Grand Mean Sample **SP59** = 67.789 1000th ft-lbs

Grand Mean Sample **SP60** = 52.153 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.