

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 154, 2nd Qtr 2026

[About the Metals Program](#) [About CTS](#) [Key to Tables and Graphs](#)

<u>Analysis</u>	<u>Test Group</u>
Impact Tests	
1003	Charpy V-Notch (-30 degrees)
Tensile Tests	
1131	Tensile Strength: Lab-Machined Flat Steel
1132	Yield Strength: Lab-Machined Flat Steel
1133	Elongation: Lab-Machined Flat Steel
1134	r-Value: Lab-Machined Flat Steel
1135	n-Value: Lab-Machined Flat Steel
Fasteners	
1201	Fastener Wedge Tensile (10 degree)
1202	Fastener Axial Tensile
1203	Fastener Wedge Tensile (10 degree) - Metric
1204	Fastener Axial Tensile - Metric
1210	Rockwell Hardness: Externally Threaded Fasteners
1211	Vickers Hardness: Externally Threaded Fasteners
1220	Fastener Double Shear
Hardness / Metallography Tests	
1301	Rockwell Hardness: C & B Scales
1303	Rockwell Hardness: C Scale
1311	Vickers Hardness 10 kgf
1351	Rockwell Superficial Hardness (30N Scale)
1401	Total Case Depth
1402	Effective Case Depth
1411	Grain Size (Stainless Steel)
1421	Alpha Case Depth
1422	Alloy Depletion: Inconel
Chemical Analyses	
1500 - 1509	Chemical Analysis: Nickel-based Alloy
1540 - 1547	Chemical Analysis: Aluminum Alloy
1640 - 1651	Chemical Analysis: Corrosion Resistant Steel

ABOUT THE FASTENERS & METALS PROGRAM

Collaborative Testing Services operates and maintains the program for Fasteners and Metals as part of a series of Proficiency and Interlaboratory Testing Programs offered by CTS in cooperation with various associations for a wide range of industries. Personnel from the National Institute of Standards and Technology (formerly the National Bureau of Standards), Industrial Fasteners Institute (IFI), and the Naval Shipyard Laboratories provide technical guidance and advice to this program.

The purpose of the program is to give participating laboratories a means to compare periodically the level and uniformity of their testing with that of other laboratories in the industry. It also provides a realistic assessment of the state of fasteners and metals testing proficiency.

In each report, there is a summary of the statistics for the analysis and a graphical representation of the data for each test. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations. Refer to the KEY TO TABLES AND GRAPHS for an explanation of terms and guidelines to interpreting the results.

ABOUT CTS

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

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Key for Fasteners & Metals Program Web Summary Report

WebCode	- Assigned laboratory identification number(temporary)used to ensure lab confidentiality while permitting a lab to locate its data in the report published on the CTS website.
Lab Mean	- The average of the test results obtained 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.
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 (CPV)	- 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. $CPV = (LAB\ MEAN - GRAND\ MEAN) / BETWEEN-LAB\ STANDARD\ DEVIATION$. 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).
Instr. Code	- A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
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 Flags

Data Flag Type	Statistically Included/Excluded	ACTION REQUIRED
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note regarding the flag. If this error is repeated in future rounds, however, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required (all tests except Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an additional Memo.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two or more M flags for a test may need to stop and review its testing procedures.
Graph	- For each laboratory, the Lab Mean for the second sample (y-axis) is plotted against the Lab Mean for the first sample (x-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 included 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 above. Labs not receiving a data flag appear as points on the plot.	



Fasteners and Metals Interlaboratory Testing Program

Analysis 1003

Charpy V-Notch (-30 degrees)
ASTM E23

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample U17			Sample U18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
37D4XR	X	22.67	-1.45	-0.57	17.33	-6.77	-3.31
3QRZ72		22.74	-1.38	-0.54	25.23	1.12	0.55
49AFL4		23.87	-0.25	-0.10	20.33	-3.77	-1.84
6QKGCV		20.34	-3.78	-1.49	21.24	-2.87	-1.40
7GV4WW		26.21	2.10	0.82	23.50	-0.61	-0.30
7YTJWM		22.33	-1.78	-0.70	22.33	-1.77	-0.87
838PMT		26.33	2.22	0.87	24.00	-0.11	-0.05
8496RF		25.67	1.55	0.61	26.00	1.89	0.92
89YNKX		23.56	-0.56	-0.22	26.45	2.34	1.14
9W7ELV		23.06	-1.06	-0.42	22.63	-1.47	-0.72
BK2FHD		22.69	-1.43	-0.56	23.89	-0.22	-0.11
C6JMPZ		23.61	-0.51	-0.20	22.72	-1.39	-0.68
CVWYH6	*	17.33	-6.78	-2.67	21.47	-2.64	-1.29
E4ECC9		24.00	-0.12	-0.05	23.33	-0.77	-0.38
ENRQ4N		23.67	-0.45	-0.18	24.33	0.23	0.11
F9QCK7		24.63	0.51	0.20	23.97	-0.14	-0.07
HDXRQZ	*	20.34	-3.78	-1.49	25.31	1.20	0.59
HYXZY4		23.95	-0.16	-0.06	23.50	-0.61	-0.30
HZ8RA6		22.17	-1.94	-0.77	22.64	-1.47	-0.72
KCT4CT		26.63	2.52	0.99	25.60	1.49	0.73
KLDG8H		25.67	1.55	0.61	24.67	0.56	0.27
LBWZ9A		23.95	-0.16	-0.06	23.05	-1.06	-0.52
LFRRG8		24.33	0.22	0.09	24.67	0.56	0.27
LX9YQH		29.38	5.26	2.07	27.12	3.01	1.47
M8GQV7		26.00	1.88	0.74	24.67	0.56	0.27
N47ATR	*	30.98	6.86	2.70	29.61	5.50	2.68
N6N4U3		21.87	-2.25	-0.88	22.68	-1.43	-0.70
Q4L982		23.23	-0.89	-0.35	22.60	-1.51	-0.74
QXB49M		22.55	-1.56	-0.62	22.55	-1.56	-0.76
WBXKGU	*	28.33	4.22	1.66	30.00	5.89	2.88
WPYXXQ		24.21	0.10	0.04	23.30	-0.81	-0.40
WZJEJ7		24.33	0.22	0.09	24.00	-0.11	-0.05
X7KY73		24.00	-0.12	-0.05	23.67	-0.44	-0.22
XLXCKE		25.33	1.22	0.48	26.00	1.89	0.92
Y63GF2		24.85	0.73	0.29	23.13	-0.98	-0.48
YN2FW2		21.93	-2.18	-0.86	23.60	-0.51	-0.25

Summary Statistics

	Sample U17		Sample U18	
Grand Means	24.12	Joules	24.11	Joules
Std Dev Btwn Labs	2.54	Joules	2.05	Joules

Samples U17, U18 : AISI 4340, AISI 4340

Statistics based on 35 of 36 reporting participants

Comments on Assigned Data Flags for Test #1003

37D4XR (X) - Data for sample U18 are low.

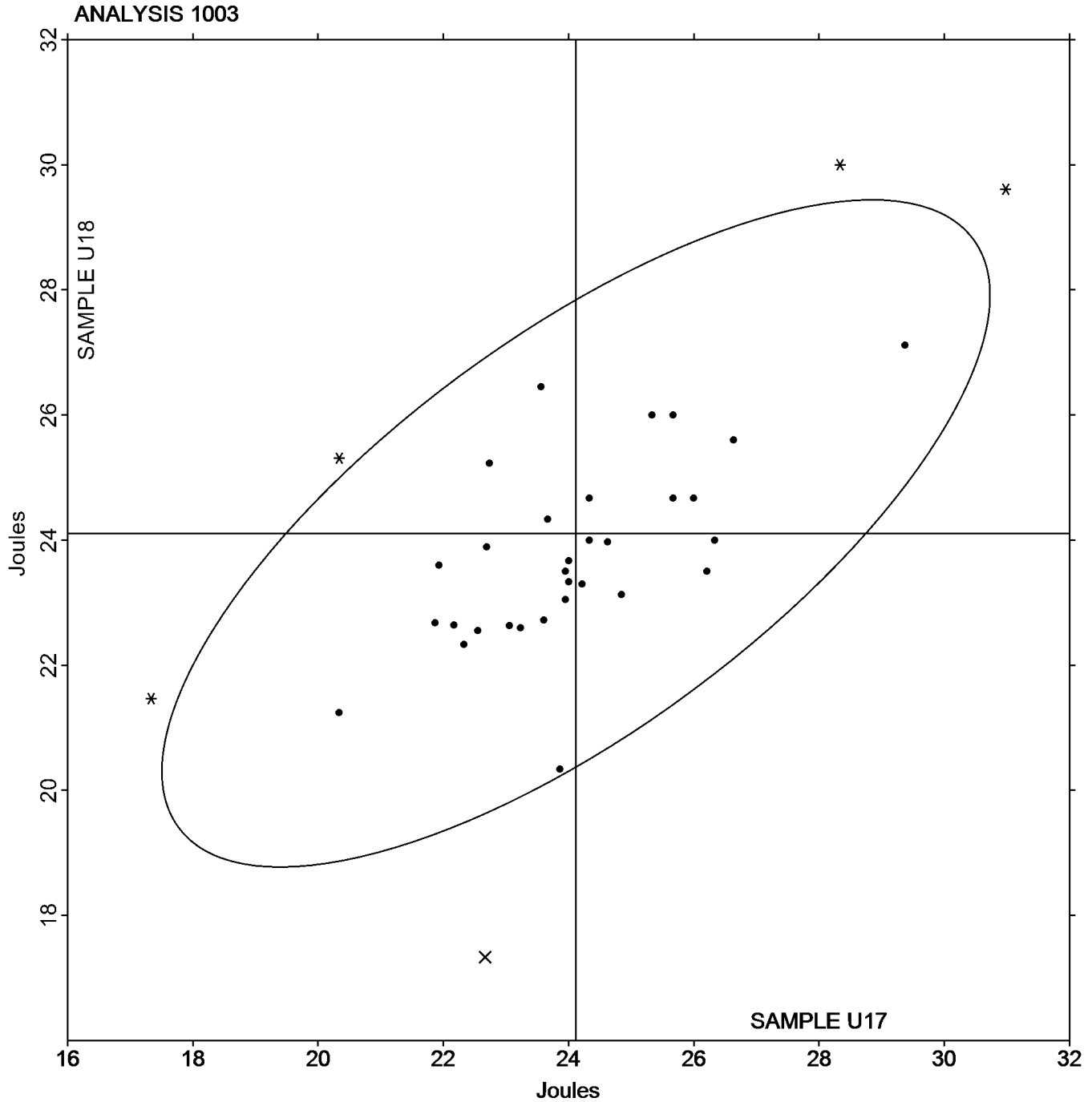


SAMPLE U17

24.12 Joules

SAMPLE U18

24.11 Joules





Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27AJBP		46.25	0.26	0.31	48.31	0.11	0.11
2U3EKW	*	47.80	1.81	2.18	51.10	2.90	3.11
3CVL8T	X	43.00	-2.99	-3.60	49.40	1.20	1.28
3GPPQY	X	51.34	5.35	6.44	53.37	5.17	5.55
3YM4ZD		46.05	0.06	0.07	47.94	-0.27	-0.29
43NERK		46.73	0.74	0.89	48.23	0.03	0.03
4FRMMG		46.12	0.13	0.16	49.02	0.82	0.88
4HGVUW	X	42.30	-3.69	-4.44	47.50	-0.70	-0.76
68EZA7		46.60	0.61	0.73	48.90	0.70	0.75
6J8EDA		44.36	-1.64	-1.97	47.39	-0.81	-0.87
6NL8CF		46.00	0.01	0.01	48.24	0.03	0.03
6TTK9R		46.40	0.41	0.49	48.30	0.10	0.10
7L7GCA		44.97	-1.02	-1.22	47.38	-0.82	-0.88
7RT48F		46.70	0.71	0.85	48.50	0.30	0.32
82FHPC		47.09	1.10	1.33	49.24	1.04	1.11
9Y489X		44.60	-1.39	-1.67	46.40	-1.80	-1.94
A6PE9H		44.80	-1.19	-1.43	47.50	-0.70	-0.76
A8EUM8		46.00	0.01	0.01	47.50	-0.70	-0.76
AD447Q		46.46	0.47	0.56	48.76	0.56	0.60
AMAYBG		46.51	0.52	0.63	48.84	0.63	0.68
B4D6TQ	X	43.24	-2.75	-3.31	46.15	-2.06	-2.21
BK2FHD		46.31	0.31	0.38	47.56	-0.64	-0.69
BYMLXM		45.60	-0.39	-0.47	48.20	0.00	-0.01
CGVC6G		46.50	0.51	0.61	48.90	0.70	0.75
CKCGY7		44.93	-1.06	-1.28	46.50	-1.70	-1.83
CL8XFA		46.10	0.11	0.13	48.00	-0.20	-0.22
CPUPBC	*	46.08	0.09	0.10	49.95	1.74	1.87
DHLRW6	X	42.80	-3.19	-3.84	46.50	-1.70	-1.83
DZ7CZ4		45.69	-0.30	-0.37	48.28	0.08	0.08
ECY62Y		45.20	-0.79	-0.95	47.70	-0.50	-0.54
F33PPZ		47.00	1.01	1.21	48.40	0.20	0.21
FA49L4		45.98	-0.01	-0.02	47.86	-0.34	-0.37
FJARC2		46.70	0.71	0.86	48.30	0.09	0.10
FPHAL2		46.50	0.51	0.61	48.20	0.00	-0.01
FR8HUG		45.80	-0.19	-0.23	47.90	-0.30	-0.33
FV7WFL		46.90	0.91	1.09	49.70	1.50	1.60
GEDL43		45.71	-0.28	-0.34	48.15	-0.05	-0.06
GVKT7B		45.76	-0.23	-0.28	48.42	0.22	0.23
H2HUXP		47.30	1.31	1.58	49.90	1.69	1.81
H63JH2		44.30	-1.69	-2.04	46.90	-1.30	-1.40
H7WFLU3		46.87	0.88	1.06	49.28	1.07	1.15
H87FU6		45.28	-0.71	-0.85	46.48	-1.72	-1.84
H893K4		46.20	0.21	0.25	48.00	-0.20	-0.22
HDEZRM		44.55	-1.44	-1.74	47.30	-0.90	-0.97
HGBP9U		44.80	-1.19	-1.43	47.50	-0.70	-0.76
HJ66NX		46.70	0.71	0.85	48.50	0.30	0.32
HYXZY4		46.56	0.57	0.68	48.44	0.24	0.26



Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
HZ8RA6		46.46	0.47	0.56	48.23	0.03	0.03
HZBC2E	X	57.32	11.33	13.64	47.08	-1.12	-1.21
J838E3		46.85	0.86	1.03	48.69	0.48	0.52
J88NC2		46.00	0.01	0.01	48.10	-0.10	-0.11
JX2ZH4	*	44.10	-1.89	-2.28	45.40	-2.80	-3.01
K43H9F		46.90	0.91	1.09	48.70	0.50	0.53
KP3JM4		44.54	-1.45	-1.75	47.55	-0.65	-0.70
KPZU8Z		46.41	0.42	0.51	48.30	0.09	0.10
KR6HVC		46.00	0.01	0.01	47.00	-1.20	-1.29
KXC9Z3		44.86	-1.13	-1.36	46.67	-1.53	-1.64
L3LLFF		45.90	-0.09	-0.11	48.10	-0.10	-0.11
L77QYC		46.12	0.13	0.16	48.73	0.53	0.57
L7NJTU		45.33	-0.66	-0.80	47.73	-0.47	-0.51
LAPHAЕ		46.20	0.21	0.25	48.40	0.20	0.21
LFRRG8	*	48.10	2.11	2.54	49.20	1.00	1.07
LWE9K4		45.35	-0.64	-0.77	47.60	-0.60	-0.65
LWGRKY		45.90	-0.09	-0.11	48.30	0.10	0.10
M3GNMW		46.00	0.01	0.01	48.70	0.50	0.53
M8GQV7		47.60	1.61	1.94	50.00	1.80	1.93
MPV9JW		45.60	-0.39	-0.47	47.80	-0.40	-0.43
MREFVD		45.54	-0.45	-0.55	47.64	-0.57	-0.61
N47ATR		45.40	-0.59	-0.71	47.72	-0.49	-0.52
PD9WGH	*	46.40	0.41	0.49	50.40	2.20	2.36
PVBTGT		46.25	0.26	0.32	48.88	0.67	0.72
PVRMH4		45.90	-0.09	-0.11	48.00	-0.20	-0.22
PXVKNP		44.90	-1.09	-1.31	47.70	-0.50	-0.54
Q2J886		44.90	-1.09	-1.31	47.00	-1.20	-1.29
Q44E7R		46.12	0.13	0.16	48.00	-0.20	-0.22
Q4L982		46.50	0.51	0.61	48.50	0.30	0.32
QV98QU		46.46	0.47	0.57	48.34	0.13	0.14
RAMQVT		46.56	0.57	0.68	48.44	0.24	0.26
RUADJM		46.40	0.41	0.49	48.40	0.20	0.21
T34X8Z		47.80	1.81	2.18	49.30	1.10	1.17
TAF948		46.20	0.21	0.25	48.80	0.60	0.64
TLEX8N		45.40	-0.59	-0.71	47.30	-0.90	-0.97
TTCFTR		45.48	-0.51	-0.61	47.37	-0.84	-0.90
TZVU9H		46.60	0.61	0.73	48.20	0.00	-0.01
U4UJDW		45.52	-0.47	-0.57	49.03	0.83	0.89
U8DBPY		47.80	1.81	2.18	49.70	1.50	1.60
UB8GW9	X	42.80	-3.19	-3.84	44.20	-4.00	-4.30
UJMZEM		45.80	-0.19	-0.23	48.70	0.50	0.53
UPNDD6	X	40.90	-5.09	-6.13	43.80	-4.40	-4.73
UPTUB4		45.00	-0.99	-1.19	47.80	-0.40	-0.43
UTQBPJ		46.22	0.23	0.28	48.25	0.05	0.05
UVFKXY	M	No Data Reported			48.80	0.59	0.64
UWRA84		46.21	0.22	0.26	47.35	-0.86	-0.92
VCFU6P		47.58	1.59	1.91	49.97	1.77	1.89



Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
VMJ4LZ	X	45.83	-0.17	-0.20	45.72	-2.49	-2.67
W3PVRP		44.90	-1.09	-1.31	47.25	-0.95	-1.02
W7QTC3		45.70	-0.29	-0.35	49.30	1.10	1.17
WJC9DG		45.72	-0.27	-0.33	48.02	-0.18	-0.19
WK8QEH	X	45.99	0.00	0.00	50.15	1.95	2.09
X2BND8		45.30	-0.69	-0.83	46.50	-1.70	-1.83
X6UQ7Y	X	48.76	2.77	3.34	51.32	3.11	3.34
Y6M9ED		45.30	-0.69	-0.83	47.70	-0.50	-0.54
YCRRXC		45.96	-0.03	-0.03	48.66	0.46	0.49
YCRRZX		45.10	-0.89	-1.07	46.20	-2.00	-2.15
YDDQTL		46.94	0.95	1.14	48.79	0.59	0.63
YN2FW2		46.30	0.31	0.37	48.88	0.68	0.72
YU7BL4	X	45.05	-0.94	-1.13	42.28	-5.93	-6.36
Z3VBLD		45.70	-0.29	-0.35	47.90	-0.30	-0.33
ZGGQPD		45.80	-0.19	-0.23	47.90	-0.30	-0.33
ZLQ2JT		47.00	1.01	1.21	49.00	0.80	0.85
ZP8A4L		46.20	0.21	0.25	48.20	0.00	-0.01

Summary Statistics

	Sample F17		Sample F18	
Grand Means	45.99	ksi	48.20	ksi
Std Dev Btwn Labs	0.83	ksi	0.93	ksi

Samples F17, F18 : AISI 1010 - 14G, AISI 1010 - 16G

Statistics based on 98 of 111 reporting participants

Comments on Assigned Data Flags for Test #1131

- 3CVL8T (X) - Data for sample F17 are low.
- 3GPPQY (X) - Data for both samples are high. Possible Systematic Error.
- 4HGVUW (X) - Data for sample F17 are low.
- B4D6TQ (X) - Data for sample F17 are low.
- DHLRW6 (X) - Data for sample F17 are low.
- HZBC2E (X) - Data for sample F17 are high.
- UB8GW9 (X) - Data for both samples are low. Possible Systematic Error.
- UPNDD6 (X) - Data for both samples are low. Possible Systematic Error.
- UVFKXY (M) - Participant did not submit data for sample F17.
- VMJ4LZ (X) - Inconsistent in testing between samples.
- WK8QEH (X) - Inconsistent in testing between samples.
- X6UQ7Y (X) - Data for both samples are high. Possible Systematic Error.
- YU7BL4 (X) - Data for sample F18 are low.

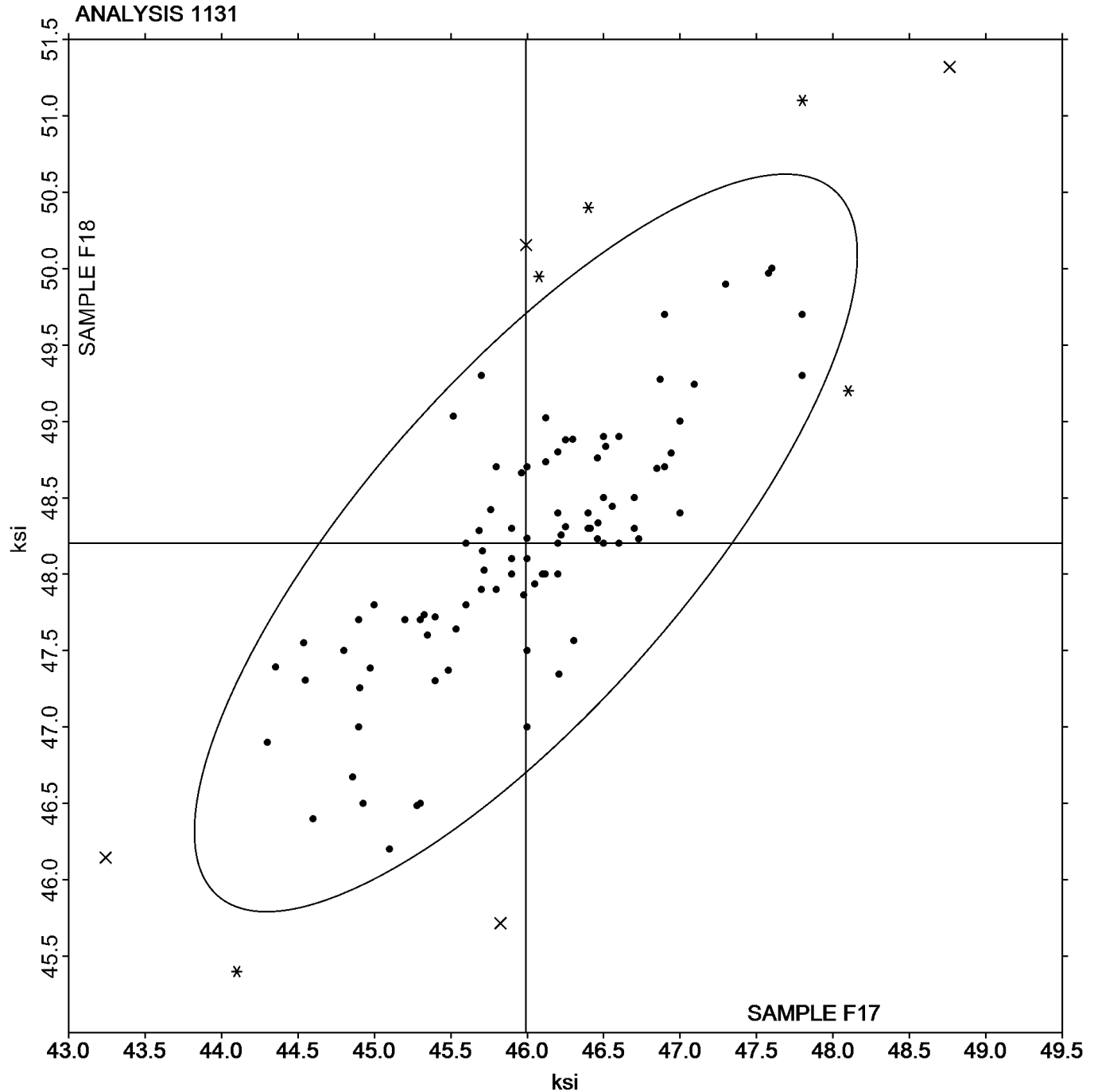


SAMPLE F17

45.99 ksi

SAMPLE F18

48.20 ksi





Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27AJBP		25.15	-0.92	-0.77	28.92	-1.03	-1.06
2U3EKW		26.80	0.73	0.62	31.80	1.85	1.89
3CVL8T		25.90	-0.17	-0.14	31.00	1.05	1.07
3GPPQY	X	31.62	5.55	4.66	35.24	5.29	5.42
3YM4ZD		25.86	-0.21	-0.17	29.31	-0.64	-0.66
43NERK		24.56	-1.51	-1.26	28.48	-1.47	-1.51
4FRMMG		25.96	-0.11	-0.09	30.17	0.21	0.22
4HGVUW	X	21.90	-4.17	-3.50	29.30	-0.65	-0.67
68EZA7		28.30	2.23	1.87	31.90	1.95	1.99
6J8EDA	*	22.97	-3.10	-2.60	29.47	-0.49	-0.50
6NL8CF		25.93	-0.14	-0.11	30.23	0.28	0.28
6TTK9R		25.60	-0.47	-0.39	29.30	-0.65	-0.67
7L7GCA		26.46	0.39	0.33	29.93	-0.03	-0.03
7RT48F		26.10	0.03	0.03	29.70	-0.25	-0.26
82FHPC		25.77	-0.29	-0.25	29.72	-0.24	-0.24
9Y489X		24.40	-1.67	-1.40	27.90	-2.05	-2.11
A6PE9H		25.30	-0.77	-0.64	29.40	-0.55	-0.57
A8EUM8	X	33.30	7.23	6.07	35.10	5.15	5.27
AD447Q		26.60	0.53	0.45	30.10	0.15	0.15
AMAYBG		25.65	-0.42	-0.35	28.63	-1.32	-1.35
B4D6TQ		24.53	-1.54	-1.29	28.89	-1.07	-1.10
BK2FHD		26.25	0.19	0.16	29.53	-0.42	-0.44
BYMLXM		25.50	-0.57	-0.48	28.40	-1.55	-1.59
CGVC6G		25.60	-0.47	-0.39	29.40	-0.55	-0.57
CKCGY7		26.19	0.12	0.10	28.45	-1.51	-1.55
CL8XFA		25.70	-0.37	-0.31	29.60	-0.35	-0.36
CPUPBC		26.62	0.56	0.47	31.07	1.11	1.14
DHLRW6		23.90	-2.17	-1.82	28.40	-1.55	-1.59
DZ7CZ4		26.80	0.74	0.62	30.89	0.94	0.96
ECY62Y		25.70	-0.37	-0.31	29.70	-0.25	-0.26
F33PPZ		24.40	-1.67	-1.40	30.10	0.15	0.15
FA49L4		26.83	0.77	0.64	30.46	0.50	0.52
FJARC2		27.85	1.78	1.49	30.75	0.79	0.81
FPHAL2		27.30	1.23	1.03	29.80	-0.15	-0.16
FR8HUG		28.90	2.83	2.38	31.10	1.15	1.17
FV7WFL		27.60	1.53	1.29	31.30	1.35	1.38
GEDL43		28.82	2.75	2.31	30.95	1.00	1.02
GVKT7B		25.96	-0.11	-0.09	30.40	0.44	0.46
H2HUXP		27.30	1.23	1.03	31.00	1.05	1.07
H63JH2		25.11	-0.96	-0.80	28.92	-1.03	-1.06
H7WPU3		27.21	1.15	0.96	30.92	0.96	0.99
H87FU6		25.44	-0.63	-0.53	28.60	-1.35	-1.39
H893K4		27.81	1.74	1.46	30.10	0.15	0.15
HDEZRM		24.50	-1.57	-1.32	29.00	-0.95	-0.98
HGBP9U		24.90	-1.17	-0.98	29.20	-0.75	-0.77
HJ66NX		27.70	1.63	1.37	31.20	1.25	1.28
HYXZY4		26.25	0.19	0.16	29.88	-0.08	-0.08



Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
HZ8RA6		26.33	0.26	0.22	29.56	-0.39	-0.40
HZBC2E	X	31.77	5.70	4.79	27.79	-2.16	-2.22
J838E3		25.79	-0.28	-0.23	29.54	-0.41	-0.42
J88NC2		26.40	0.33	0.28	29.40	-0.55	-0.57
JX2ZH4		23.70	-2.37	-1.99	27.90	-2.05	-2.11
K43H9F		26.60	0.53	0.45	30.30	0.35	0.35
KP3JM4		26.26	0.19	0.16	30.42	0.47	0.48
KPZU8Z		26.11	0.04	0.03	29.59	-0.37	-0.38
KR6HVC		29.00	2.93	2.46	31.70	1.75	1.79
KXC9Z3		23.89	-2.18	-1.83	28.76	-1.19	-1.22
L3LLFF		26.20	0.13	0.11	30.60	0.65	0.66
L77QYC		26.69	0.62	0.52	30.17	0.21	0.22
L7NJTU	X	31.68	5.61	4.71	29.96	0.00	0.00
LAPHAЕ		25.10	-0.97	-0.81	29.30	-0.65	-0.67
LFRRG8		27.20	1.13	0.95	30.30	0.35	0.35
LWE9K4		25.50	-0.57	-0.48	29.70	-0.25	-0.26
LWGRKY		24.40	-1.67	-1.40	29.20	-0.75	-0.77
M3GNMW		25.60	-0.47	-0.39	30.20	0.25	0.25
M8GQV7		26.80	0.73	0.62	31.00	1.05	1.07
MPV9JW		27.40	1.33	1.12	31.00	1.05	1.07
MREFVD		25.54	-0.53	-0.44	30.56	0.60	0.62
N47ATR		25.53	-0.54	-0.45	29.59	-0.37	-0.38
PD9WGH	X	26.10	0.03	0.03	33.10	3.15	3.22
PVBTGT		25.80	-0.26	-0.22	29.94	-0.02	-0.02
PVRMH4		26.70	0.63	0.53	30.60	0.65	0.66
PXVKNP		24.10	-1.97	-1.65	28.70	-1.25	-1.29
Q2J886		25.00	-1.07	-0.90	28.60	-1.35	-1.39
Q44E7R	X	26.97	0.90	0.76	35.56	5.61	5.75
Q4L982		25.00	-1.07	-0.90	28.70	-1.25	-1.29
QV98QU		26.63	0.56	0.47	30.49	0.53	0.55
RAMQVT		27.41	1.35	1.13	30.89	0.94	0.96
RUADJM		25.80	-0.27	-0.22	29.90	-0.05	-0.06
T34X8Z		26.40	0.33	0.28	30.80	0.85	0.87
TAF948		25.30	-0.77	-0.64	29.70	-0.25	-0.26
TLEX8N		27.00	0.93	0.78	30.30	0.35	0.35
TTCFTR		25.76	-0.31	-0.26	29.69	-0.27	-0.27
TZVU9H		26.50	0.43	0.36	29.70	-0.25	-0.26
U4UJDW		26.58	0.51	0.43	30.27	0.32	0.33
U8DBPY		26.10	0.03	0.03	30.00	0.05	0.05
UB8GW9	X	21.20	-4.87	-4.08	24.60	-5.35	-5.49
UJMZEM		25.80	-0.27	-0.22	30.30	0.35	0.35
UPNDD6		23.50	-2.57	-2.15	27.60	-2.35	-2.41
UPTUB4		24.80	-1.27	-1.06	29.70	-0.25	-0.26
UTQBPJ		26.28	0.21	0.18	29.41	-0.54	-0.55
UVFKXY	M	No Data Reported			30.11	0.16	0.16
UWRA84		26.13	0.07	0.06	29.18	-0.78	-0.80
VCFU6P	X	30.79	4.72	3.96	33.19	3.24	3.32



Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
VMJ4LZ	*	28.33	2.26	1.90	29.23	-0.72	-0.74
W3PVRP		25.68	-0.38	-0.32	29.89	-0.07	-0.07
W7QTC3	X	29.10	3.03	2.55	34.00	4.05	4.15
WJC9DG		26.62	0.56	0.47	30.07	0.11	0.12
WK8QEH	X	25.27	-0.80	-0.67	32.11	2.16	2.21
X2BND8	X	26.00	-0.07	-0.06	23.30	-6.65	-6.82
X6UQ7Y	*	29.06	2.99	2.51	33.21	3.25	3.33
Y6M9ED		25.70	-0.37	-0.31	29.70	-0.25	-0.26
YCRRXC		24.87	-1.19	-1.00	29.31	-0.64	-0.66
YCRRZX		26.30	0.23	0.20	28.70	-1.25	-1.29
YDDQTL		25.95	-0.12	-0.10	29.70	-0.25	-0.26
YN2FW2		25.01	-1.06	-0.89	30.21	0.26	0.26
YU7BL4	*	25.54	-0.53	-0.44	27.25	-2.70	-2.77
Z3VBLD		26.10	0.03	0.03	29.90	-0.05	-0.06
ZGGQPD		25.70	-0.37	-0.31	29.40	-0.55	-0.57
ZLQ2JT	X	36.00	9.93	8.34	34.00	4.05	4.15
ZP8A4L		26.20	0.13	0.11	29.90	-0.05	-0.06

Summary Statistics

	Sample F17		Sample F18	
Grand Means	26.07	ksi	29.95	ksi
Stnd Dev Btwn Labs	1.19	ksi	0.98	ksi

Samples F17, F18 : AISI 1010 - 14G, AISI 1010 - 16G

Statistics based on 97 of 111 reporting participants

Comments on Assigned Data Flags for Test #1132

- 3GPPQY (X) - Data for both samples are high.
- 4HGVUW (X) - Data for sample F17 are low.
- A8EUM8 (X) - Data for both samples are high.
- HZBC2E (X) - Data for sample F17 are high.
- L7NJTU (X) - Data for sample F17 are high.
- PD9WGH (X) - Data for sample F18 are high.
- Q44E7R (X) - Data for sample F18 are high.
- UB8GW9 (X) - Data for both samples are low.
- UVFKXY (M) - Participant did not submit data for sample F17.
- VCFU6P (X) - Data for both samples are high.
- W7QTC3 (X) - Data for sample F18 are high.
- WK8QEH (X) - Inconsistent in testing between samples.
- X2BND8 (X) - Data for sample F18 are low.
- ZLQ2JT (X) - Data for both samples are high.



Analysis 1132

Yield Strength: Lab-Machined Flat Steel

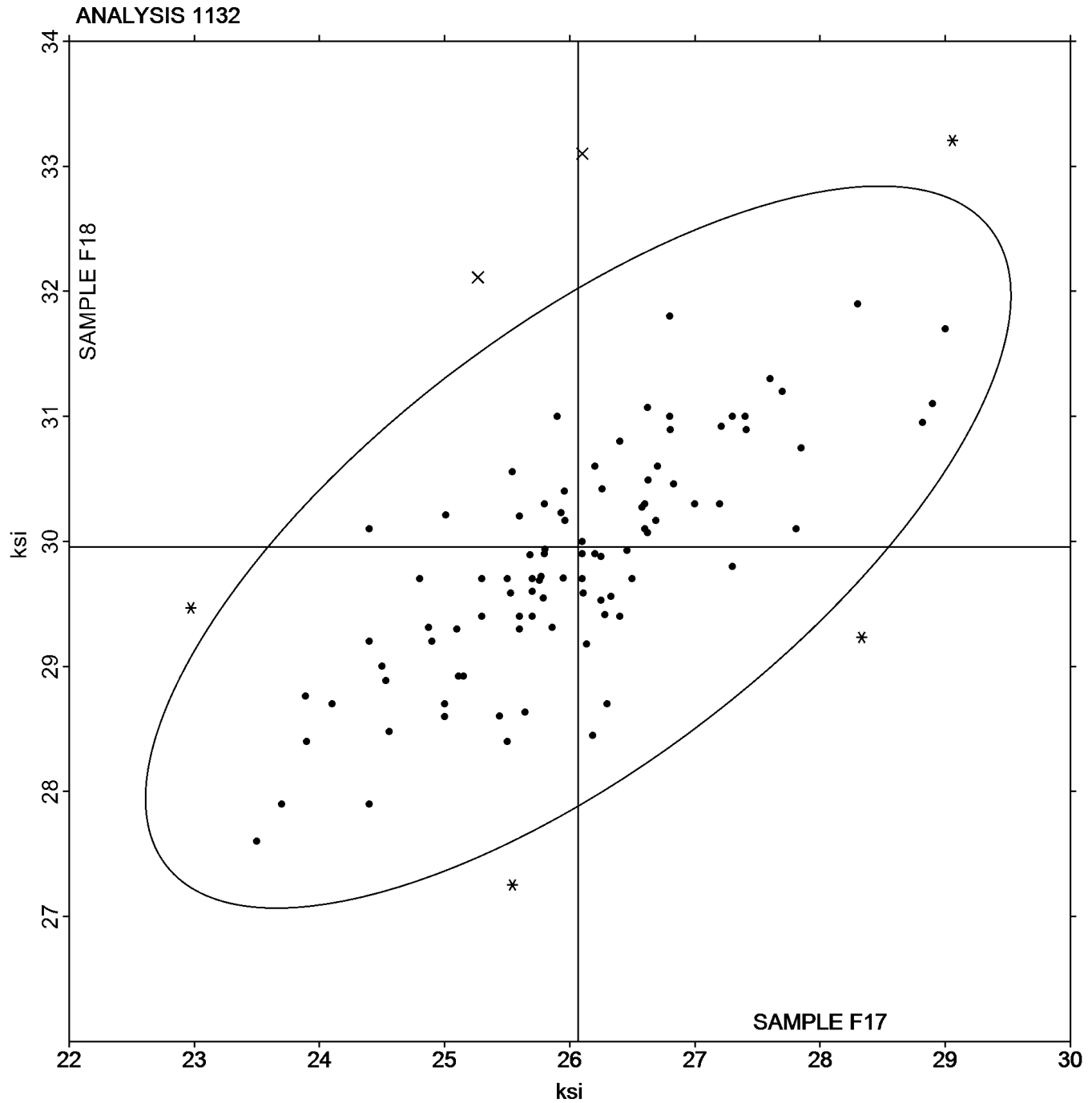
ASTM E8

SAMPLE F17

SAMPLE F18

26.07 ksi

29.95 ksi





Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27AJBP		43.20	-1.02	-0.36	39.20	-0.93	-0.33
2U3EKW		44.00	-0.22	-0.08	39.70	-0.43	-0.15
3CVL8T		44.40	0.18	0.06	37.30	-2.83	-0.99
3GPPQY	*	39.84	-4.38	-1.54	33.20	-6.93	-2.43
3YM4ZD		46.00	1.78	0.62	41.20	1.07	0.38
43NERK		44.10	-0.12	-0.04	41.05	0.92	0.32
4FRMMG		45.90	1.68	0.59	41.50	1.37	0.48
4HGVUW		44.40	0.18	0.06	40.30	0.17	0.06
68EZA7		41.20	-3.02	-1.06	37.60	-2.53	-0.89
6J8EDA		48.70	4.48	1.57	46.00	5.87	2.06
6NL8CF		44.90	0.68	0.24	42.60	2.47	0.87
6TTK9R		41.60	-2.62	-0.92	37.90	-2.23	-0.78
7L7GCA		43.95	-0.27	-0.10	40.40	0.27	0.10
7RT48F		44.10	-0.12	-0.04	41.90	1.77	0.62
82FHPC		41.20	-3.02	-1.06	37.60	-2.53	-0.89
9Y489X		44.50	0.28	0.10	43.50	3.37	1.19
A6PE9H		48.00	3.78	1.33	43.50	3.37	1.19
A8EUM8	*	46.20	1.98	0.69	38.50	-1.63	-0.57
AD447Q		45.19	0.97	0.34	44.07	3.94	1.39
AMAYBG		43.10	-1.12	-0.39	39.80	-0.33	-0.11
B4D6TQ		46.77	2.55	0.89	40.26	0.14	0.05
BK2FHD		45.80	1.58	0.55	41.50	1.37	0.48
BYMLXM		46.50	2.28	0.80	42.50	2.37	0.83
CGVC6G	X	45.00	0.78	0.27	28.00	-12.13	-4.26
CKCGY7		45.00	0.78	0.27	41.55	1.42	0.50
CL8XFA		42.20	-2.02	-0.71	39.00	-1.13	-0.40
CPUPBC		47.30	3.08	1.08	43.30	3.17	1.12
DHLRW6	*	47.50	3.28	1.15	40.00	-0.13	-0.04
DZ7CZ4		42.70	-1.52	-0.53	39.10	-1.03	-0.36
ECY62Y		48.00	3.78	1.33	42.00	1.87	0.66
F33PPZ		41.80	-2.42	-0.85	38.20	-1.93	-0.68
FA49L4		42.60	-1.62	-0.57	39.00	-1.13	-0.40
FJARC2		47.00	2.78	0.97	43.00	2.87	1.01
FPHAL2	X	35.20	-9.02	-3.16	39.70	-0.43	-0.15
FR8HUG		39.10	-5.12	-1.80	36.20	-3.93	-1.38
FV7WFL		40.60	-3.62	-1.27	36.10	-4.03	-1.42
GEDL43		39.88	-4.34	-1.52	36.94	-3.19	-1.12
GVKT7B		41.90	-2.32	-0.81	37.30	-2.83	-0.99
H2HUXP		42.70	-1.52	-0.53	37.60	-2.53	-0.89
H63JH2		45.70	1.48	0.52	41.10	0.97	0.34
H7WU3		39.50	-4.72	-1.66	35.80	-4.33	-1.52
H87FU6		47.00	2.78	0.97	42.00	1.87	0.66
H893K4		44.50	0.28	0.10	40.60	0.47	0.17
HDEZRM		46.00	1.78	0.62	40.60	0.47	0.17
HGBP9U		48.60	4.38	1.54	43.90	3.77	1.33
HJ66NX		43.90	-0.32	-0.11	41.10	0.97	0.34
HYXZY4		44.00	-0.22	-0.08	40.20	0.07	0.03



Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
HZ8RA6		45.40	1.18	0.41	41.20	1.07	0.38
HZBC2E		42.10	-2.12	-0.74	38.60	-1.53	-0.54
J838E3		40.30	-3.92	-1.38	39.20	-0.93	-0.33
J88NC2		42.10	-2.12	-0.74	38.40	-1.73	-0.61
JX2ZH4		47.00	2.78	0.97	44.00	3.87	1.36
K43H9F	X	44.90	0.68	0.24	48.70	8.57	3.01
KP3JM4	*	46.50	2.28	0.80	39.01	-1.12	-0.39
KPZU8Z		43.00	-1.22	-0.43	39.20	-0.93	-0.33
KR6HVC	X	15.30	-28.92	-10.14	37.30	-2.83	-0.99
KXC9Z3		47.50	3.28	1.15	43.60	3.47	1.22
L3LLFF	X	44.00	-0.22	-0.08	45.60	5.47	1.92
L77QYC		44.20	-0.02	-0.01	39.80	-0.33	-0.11
L7NJTU		44.60	0.38	0.13	42.40	2.27	0.80
LAPHAЕ		48.60	4.38	1.54	45.10	4.97	1.75
LFRRG8		44.50	0.28	0.10	41.00	0.87	0.31
LWE9K4		43.50	-0.72	-0.25	38.90	-1.23	-0.43
LWGRKY		45.00	0.78	0.27	41.00	0.87	0.31
M3GNMW		45.80	1.58	0.55	40.70	0.57	0.20
M8GQV7		43.50	-0.72	-0.25	37.50	-2.63	-0.92
MPV9JW		45.40	1.18	0.41	40.90	0.77	0.27
MREFVD		44.71	0.49	0.17	40.60	0.47	0.17
N47ATR		51.10	6.88	2.41	45.60	5.47	1.92
PD9WGH		43.40	-0.82	-0.29	40.50	0.37	0.13
PVBTGT		42.60	-1.62	-0.57	39.50	-0.63	-0.22
PVRMH4		43.00	-1.22	-0.43	39.00	-1.13	-0.40
PXVKNP		47.80	3.58	1.25	43.10	2.97	1.05
Q2J886		48.50	4.28	1.50	43.50	3.37	1.19
Q44E7R		43.37	-0.85	-0.30	41.48	1.35	0.48
Q4L982		43.50	-0.72	-0.25	40.00	-0.13	-0.04
QV98QU	*	37.10	-7.12	-2.50	33.70	-6.43	-2.26
RAMQVT		42.40	-1.82	-0.64	39.40	-0.73	-0.26
RUADJM	*	37.70	-6.52	-2.29	36.10	-4.03	-1.42
T34X8Z		45.00	0.78	0.27	41.50	1.37	0.48
TAF948		44.00	-0.22	-0.08	41.00	0.87	0.31
TLEX8N		44.90	0.68	0.24	40.70	0.57	0.20
TTCFTR		45.70	1.48	0.52	41.00	0.87	0.31
TZVU9H		41.30	-2.92	-1.02	37.90	-2.23	-0.78
U4UJDW		45.10	0.88	0.31	39.30	-0.83	-0.29
U8DBPY		42.50	-1.72	-0.60	37.00	-3.13	-1.10
UB8GW9		45.40	1.18	0.41	40.30	0.17	0.06
UJMZEM		46.97	2.75	0.96	42.50	2.37	0.83
UPNDD6		43.30	-0.92	-0.32	38.50	-1.63	-0.57
UPTUB4		43.50	-0.72	-0.25	40.00	-0.13	-0.04
UTQBPJ		41.40	-2.82	-0.99	37.20	-2.93	-1.03
UVFKXY	M	No Data Reported			41.60	1.47	0.52
UWRA84	X	53.10	8.88	3.11	49.80	9.67	3.40
VCFU6P		42.65	-1.57	-0.55	38.31	-1.82	-0.64



Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
VMJ4LZ		41.00	-3.22	-1.13	39.00	-1.13	-0.40
W3PVRP	*	50.90	6.68	2.34	48.65	8.52	3.00
W7QTC3		37.50	-6.72	-2.36	34.40	-5.73	-2.01
WJC9DG		48.00	3.78	1.33	43.50	3.37	1.19
WK8QEHI		44.70	0.48	0.17	40.00	-0.13	-0.04
X2BND8		48.50	4.28	1.50	43.80	3.67	1.29
X6UQ7Y		45.20	0.98	0.34	41.30	1.17	0.41
Y6M9ED	X	44.80	0.58	0.20	35.50	-4.63	-1.63
YCRRXC		44.00	-0.22	-0.08	40.37	0.24	0.09
YCRRZX	*	40.00	-4.22	-1.48	33.00	-7.13	-2.51
YDDQTL		46.40	2.18	0.76	41.80	1.67	0.59
YN2FW2		44.66	0.44	0.15	39.94	-0.19	-0.07
YU7BL4		44.80	0.58	0.20	41.20	1.07	0.38
Z3VBLD		47.80	3.58	1.25	41.40	1.27	0.45
ZGGQPD		47.70	3.48	1.22	44.20	4.07	1.43
ZLQ2JT		38.20	-6.02	-2.11	33.60	-6.53	-2.29
ZP8A4L	*	38.50	-5.72	-2.01	33.00	-7.13	-2.51

Summary Statistics

	Sample F17		Sample F18	
Grand Means	44.22	Percent	40.13	Percent
Std Dev Btwn Labs	2.85	Percent	2.84	Percent

Samples F17, F18 : AISI 1010 - 14G, AISI 1010 - 16G

Statistics based on 103 of 111 reporting participants

Comments on Assigned Data Flags for Test #1133

- CGVC6G (X) - Data for sample F18 are low.
- FPHAL2 (X) - Data for sample F17 are low.
- K43H9F (X) - Data for sample F18 are high.
- KR6HVC (X) - Data for sample F17 are low.
- L3LLFF (X) - Inconsistent in testing between samples.
- UVFKXY (M) - Participant did not submit data for sample F17.
- UWRA84 (X) - Data for both samples are high. Possible Systematic Error.
- Y6M9ED (X) - Inconsistent in testing between samples.

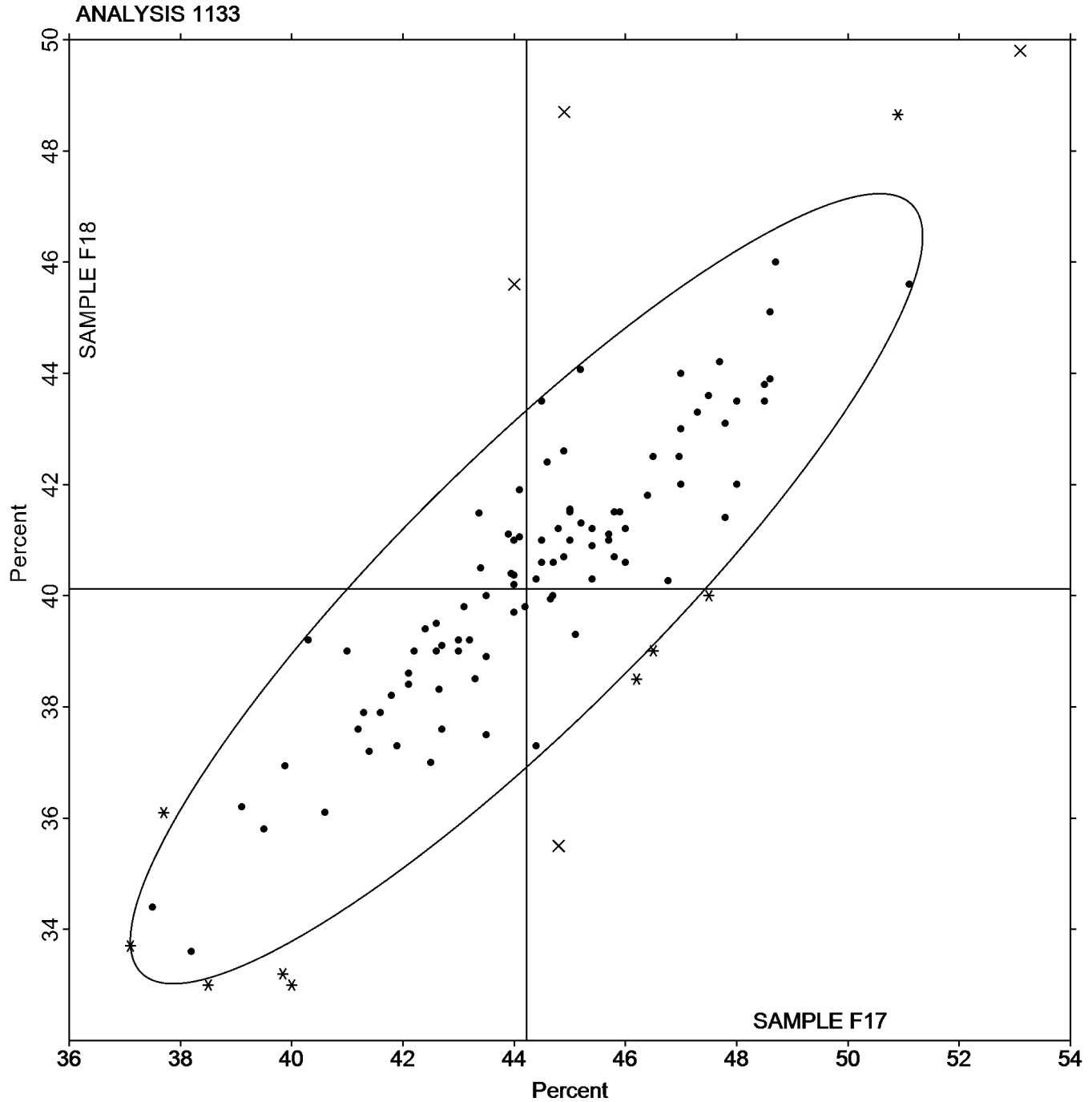


SAMPLE F17

44.22 Percent

SAMPLE F18

40.13 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1134

r-Value: Lab-Machined Flat Steel
ASTM E517

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3YM4ZD		1.680	-0.018	-0.12	1.470	-0.010	-0.08
4FRMMG		1.730	0.032	0.21	1.570	0.090	0.70
6TTK9R	X	2.347	0.649	4.26	1.583	0.103	0.80
7L7GCA		1.488	-0.210	-1.38	1.243	-0.237	-1.85
7RT48F		1.920	0.222	1.46	1.660	0.180	1.41
AD447Q		1.689	-0.009	-0.06	1.414	-0.066	-0.52
BK2FHD		1.522	-0.176	-1.16	1.303	-0.177	-1.38
CKCGY7		1.550	-0.148	-0.97	1.360	-0.120	-0.94
CPUPBC		1.670	-0.028	-0.19	1.430	-0.050	-0.39
ECY62Y		1.461	-0.237	-1.56	1.328	-0.152	-1.19
FR8HUG	X	39.00	37.302	244.90	39.00	37.520	292.93
H87FU6		1.820	0.122	0.80	1.470	-0.010	-0.08
HJ66NX		1.850	0.152	1.00	1.650	0.170	1.33
HYXZY4		1.810	0.112	0.73	1.580	0.100	0.78
HZ8RA6		1.480	-0.218	-1.43	1.290	-0.190	-1.48
J838E3		1.760	0.062	0.40	1.550	0.070	0.55
K43H9F		1.610	-0.088	-0.58	1.510	0.030	0.23
KPZU8Z		1.678	-0.020	-0.13	1.468	-0.012	-0.09
KR6HVC	X	0.0733	-1.625	-10.67	0.0587	-1.421	-11.10
M3GNMW		1.610	-0.088	-0.58	1.430	-0.050	-0.39
MPV9JW		1.780	0.082	0.54	1.500	0.020	0.16
PVBTGT		2.000	0.302	1.98	1.710	0.230	1.80
Q44E7R		1.560	-0.138	-0.91	1.380	-0.100	-0.78
QV98QU	X	68.80	67.102	440.55	62.80	61.320	478.74
RAMQVT		1.640	-0.058	-0.38	1.400	-0.080	-0.62
TLEX8N		1.730	0.032	0.21	1.470	-0.010	-0.08
TTCFTR	*	1.680	-0.018	-0.12	1.650	0.170	1.33
UJMZEM	X	1.570	-0.128	-0.84	1.680	0.200	1.56
UVFKXY	M	No Data Reported			1.500	0.020	0.16
UWRA84	X	0.7920	-0.906	-5.95	0.6740	-0.806	-6.29
VCFU6P		1.860	0.162	1.06	1.620	0.140	1.09
Y6M9ED		2.005	0.307	2.01	1.642	0.162	1.26
YDDQTL		1.574	-0.124	-0.82	1.382	-0.098	-0.77
YU7BL4	X	1.650	-0.048	-0.32	1.000	-0.480	-3.75

Summary Statistics

	Sample F17	Sample F18
Grand Means	1.698	1.480
Std Dev Btwn Labs	0.152	0.128

Samples F17, F18 : AISI 1010 - 14G, AISI 1010 - 16G

Statistics based on 26 of 34 reporting participants



Comments on Assigned Data Flags for Test #1134

6TTK9R (X) - Data for sample F17 are high.

FR8HUG (X) - Extreme data.

KR6HVC (X) - Data for both samples are low. Possible Systematic Error.

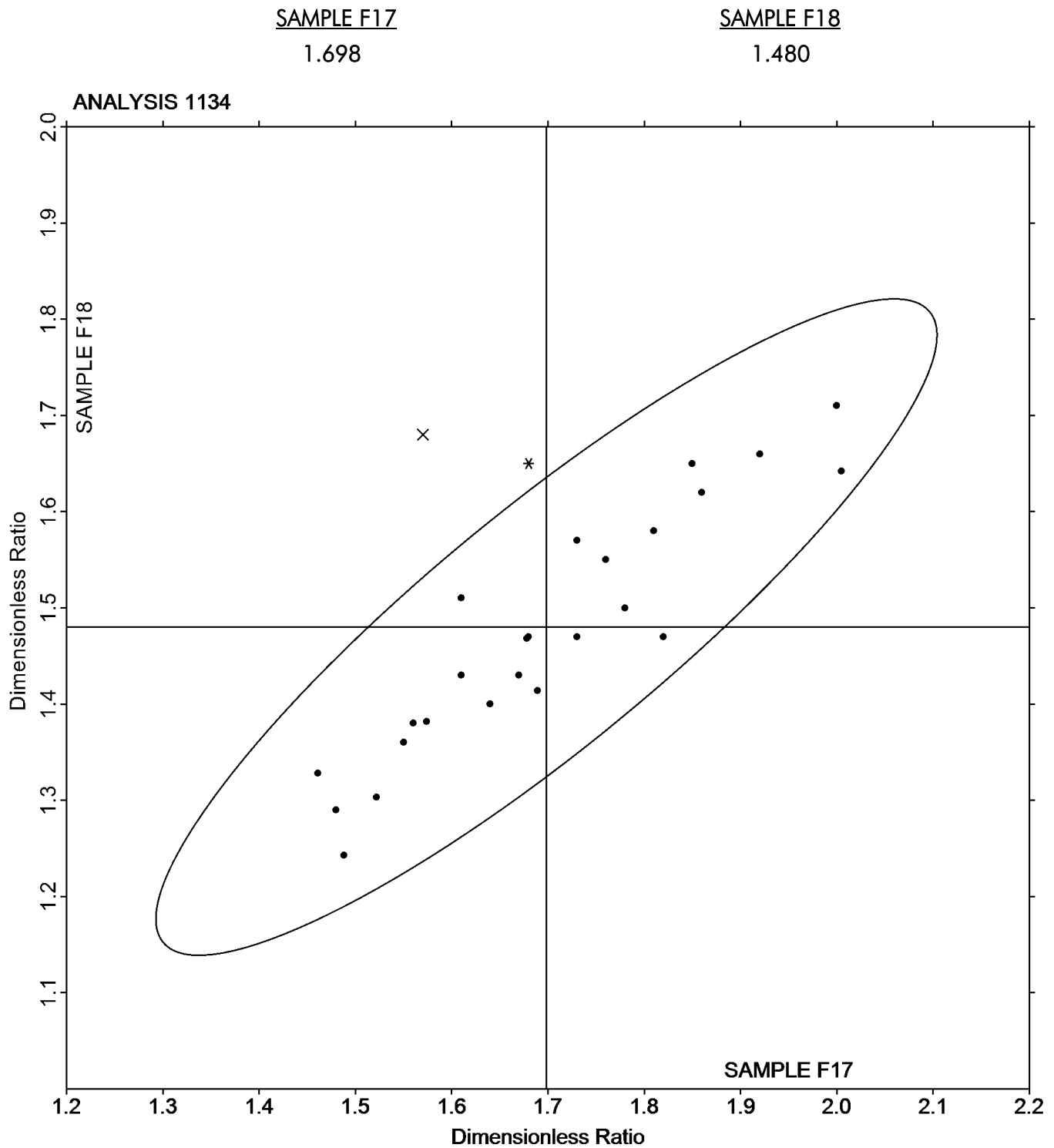
QV98QU (X) - Extreme data.

UJMZEM (X) - Inconsistent in testing between samples.

UVFKXY (M) - Participant did not submit data for sample F17.

UWRA84 (X) - Data for both samples are low. Possible Systematic Error.

YU7BL4 (X) - Data for sample F18 are low.





Fasteners and Metals Interlaboratory Testing Program

Analysis 1135

n-Value: Lab-Machined Flat Steel
ASTM E646

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3YM4ZD	*	0.2480	0.0209	2.75	0.2130	0.0164	2.82
4FRMMG		0.2260	-0.0011	-0.14	0.1970	0.0004	0.07
68EZA7		0.2260	-0.0011	-0.14	0.1920	-0.0046	-0.79
6TTK9R	*	0.2320	0.0049	0.65	0.2090	0.0124	2.13
7L7GCA		0.2340	0.0069	0.91	0.1950	-0.0016	-0.28
7RT48F		0.2240	-0.0031	-0.40	0.1960	-0.0006	-0.10
AD447Q		0.2210	-0.0061	-0.80	0.1950	-0.0016	-0.28
AMAYBG		0.2200	-0.0071	-0.93	0.1930	-0.0036	-0.62
B4D6TQ		0.2290	0.0019	0.25	0.1990	0.0024	0.41
BK2FHD		0.2250	-0.0021	-0.27	0.1980	0.0014	0.24
CKCGY7	X	0.2400	0.0129	1.70	0.2300	0.0334	5.74
CL8XFA		0.2340	0.0069	0.91	0.2000	0.0034	0.58
CPUPBC		0.2280	0.0009	0.12	0.1960	-0.0006	-0.10
ECY62Y		0.2250	-0.0021	-0.27	0.1920	-0.0046	-0.79
F33PPZ		0.2230	-0.0041	-0.53	0.1890	-0.0076	-1.31
FA49L4		0.2400	0.0129	1.70	0.2000	0.0034	0.58
FV7WFL		0.2170	-0.0101	-1.32	0.1870	-0.0096	-1.65
H7WUF3		0.2230	-0.0041	-0.53	0.1964	-0.0003	-0.04
H87FU6	X	0.2500	0.0229	3.01	0.2190	0.0224	3.85
HJ66NX		0.2300	0.0029	0.38	0.1980	0.0014	0.24
HYXZY4		0.2240	-0.0031	-0.40	0.1950	-0.0016	-0.28
HZ8RA6		0.2300	0.0029	0.38	0.2000	0.0034	0.58
J838E3		0.2210	-0.0061	-0.80	0.1930	-0.0036	-0.62
J88NC2		0.2320	0.0049	0.65	0.2030	0.0064	1.10
K43H9F		0.2230	-0.0041	-0.53	0.1930	-0.0036	-0.62
KPZU8Z		0.2240	-0.0031	-0.40	0.1940	-0.0026	-0.45
KR6HVC	X	0.0733	-0.1538	-20.18	0.0587	-0.1379	-23.69
LFRRG8		0.2360	0.0089	1.17	0.2040	0.0074	1.27
M3GNMW		0.2270	-0.0001	-0.01	0.1950	-0.0016	-0.28
M8GQV7		0.2370	0.0099	1.30	0.2040	0.0074	1.27
MPV9JW		0.2270	-0.0001	-0.01	0.1950	-0.0016	-0.28
PVBTGT		0.2160	-0.0111	-1.45	0.1890	-0.0076	-1.31
Q44E7R		0.2170	-0.0101	-1.32	0.1970	0.0004	0.07
RAMQVT		0.2200	-0.0071	-0.93	0.2000	0.0034	0.58
T34X8Z		0.2360	0.0089	1.17	0.2030	0.0064	1.10
TLEX8N		0.2270	-0.0001	-0.01	0.1950	-0.0016	-0.28
TTCFTR		0.2340	0.0069	0.91	0.2010	0.0044	0.75
TZVU9H		0.2240	-0.0031	-0.40	0.1940	-0.0026	-0.45
UJMZEM	*	0.2224	-0.0047	-0.61	0.1850	-0.0116	-1.99
UVFKXY	M	No Data Reported			0.1900	-0.0066	-1.14
UWRA84	X	0.2940	0.0669	8.78	0.3150	0.1184	20.34
VCFU6P	*	0.2060	-0.0211	-2.77	0.1840	-0.0126	-2.17
W3PVRP		0.2360	0.0089	1.17	0.2000	0.0034	0.58
WJC9DG		0.2190	-0.0081	-1.06	0.1900	-0.0066	-1.14
WK8QEHI		0.2230	-0.0041	-0.53	0.1910	-0.0056	-0.96
Y6M9ED		0.2400	0.0129	1.70	0.2020	0.0054	0.93
YDDQTL		0.2240	-0.0031	-0.40	0.1940	-0.0026	-0.45



Fasteners and Metals Interlaboratory Testing Program

Analysis 1135

n-Value: Lab-Machined Flat Steel
ASTM E646

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample F17			Sample F18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
YU7BL4		0.2350	0.0079	1.04	0.2000	0.0034	0.58
Z3VBLD		0.2240	-0.0031	-0.40	0.1970	0.0004	0.07
ZLQ2JT		0.2290	0.0019	0.25	0.2040	0.0074	1.27
ZP8A4L	X	0.1640	-0.0631	-8.28	0.1370	-0.0596	-10.24

Summary Statistics

	<u>Sample F17</u>	<u>Sample F18</u>
Grand Means	0.2271	0.1966
Std Dev Btwn Labs	0.0076	0.0058

Samples F17, F18 : AISI 1010 - 14G, AISI 1010 - 16G

Statistics based on 45 of 51 reporting participants

Comments on Assigned Data Flags for Test #1135

- CKCGY7 (X) - Data for sample F18 are high.
- H87FU6 (X) - Data for both samples are high.
- KR6HVC (X) - Data for both samples are low.
- UVFKXY (M) - Participant did not submit data for sample F17.
- UWRA84 (X) - Data for both samples are high.
- ZP8A4L (X) - Data for both samples are low.



Analysis 1135

2nd Qtr

n-Value: Lab-Machined Flat Steel

2026

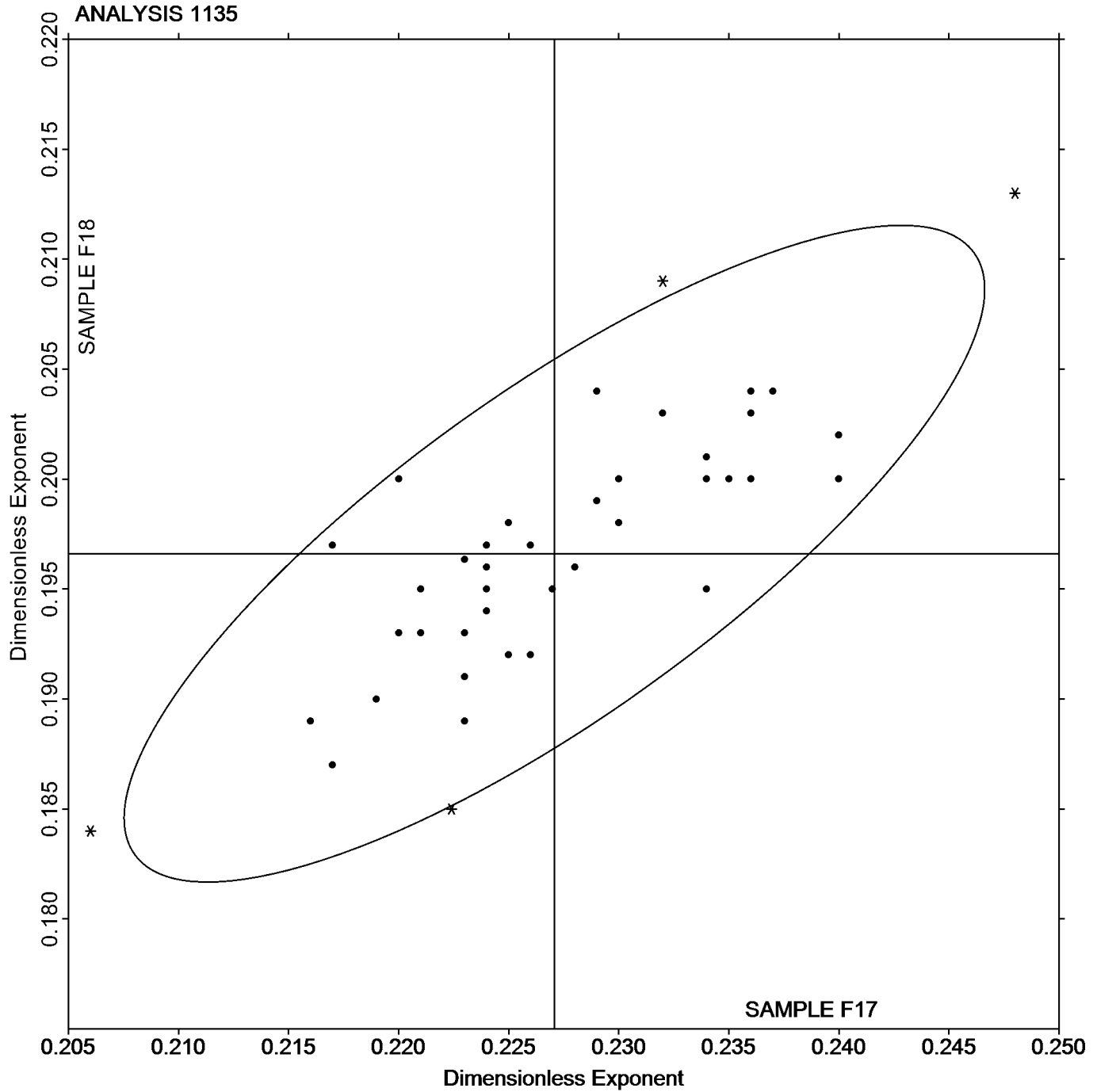
ASTM E646

SAMPLE F17

SAMPLE F18

0.2271

0.1966





Fasteners and Metals Interlaboratory Testing Program

Analysis 1201

Fastener Wedge Tensile (10 degree)
ASTM F606

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample X17			Sample X18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2PB83N		164.33	-0.46	-0.29	162.00	0.12	0.08
36W87T		163.93	-0.86	-0.55	162.07	0.19	0.12
3QCR3T		164.33	-0.46	-0.29	162.53	0.66	0.41
4Y67JK		164.61	-0.19	-0.12	160.56	-1.32	-0.82
6GYE2F		165.43	0.64	0.41	163.60	1.72	1.07
6PAQ8L	X	170.63	5.84	3.74	169.33	7.46	4.63
9JC8JK		167.57	2.78	1.77	165.73	3.86	2.39
9NUHHA		164.60	-0.19	-0.12	162.40	0.52	0.32
AUCB8E		164.20	-0.59	-0.38	162.17	0.29	0.18
C63TNQ		163.41	-1.38	-0.88	158.00	-3.87	-2.40
CPQ7NA	*	169.14	4.35	2.78	163.42	1.54	0.96
D62TX6		163.57	-1.22	-0.78	159.80	-2.08	-1.29
D6EPRA		164.23	-0.56	-0.36	162.17	0.29	0.18
EFAFR9		165.97	1.18	0.75	160.70	-1.18	-0.73
ERBWN6		165.33	0.54	0.35	163.15	1.28	0.79
F9QCK7		163.23	-1.56	-1.00	163.10	1.22	0.76
FDMZX7		165.43	0.64	0.41	162.23	0.35	0.22
GE9464		163.17	-1.62	-1.04	160.37	-1.51	-0.94
JX2ZH4		165.27	0.48	0.30	161.83	-0.04	-0.03
K7BNW3		166.27	1.48	0.94	164.23	2.36	1.46
KDTWKY		163.50	-1.29	-0.83	161.40	-0.48	-0.30
KE28BB		164.33	-0.46	-0.29	163.00	1.12	0.70
L9MZ2H		164.00	-0.79	-0.51	160.67	-1.21	-0.75
LBWZ9A		163.73	-1.06	-0.68	161.10	-0.78	-0.48
MREFVD		163.57	-1.22	-0.78	159.75	-2.13	-1.32
MWAXFJ		163.23	-1.56	-1.00	158.77	-3.11	-1.93
MX7FHK		164.82	0.03	0.02	160.59	-1.29	-0.80
NBB7K6		165.68	0.89	0.57	163.31	1.43	0.89
NXPU9V		165.18	0.39	0.25	161.56	-0.32	-0.20
P2EQ97		164.83	0.04	0.03	163.73	1.86	1.15
PPPUAT		165.17	0.38	0.24	165.73	3.86	2.39
PVRMH4	X	173.02	8.22	5.26	167.73	5.86	3.63
PZ3ZZ2		164.72	-0.07	-0.05	160.47	-1.41	-0.87
Q2JAW9	X	155.65	-9.14	-5.84	155.67	-6.20	-3.85
Q9CPDZ		163.27	-1.52	-0.97	161.93	0.06	0.03
QCWGWK		163.15	-1.64	-1.05	160.28	-1.60	-0.99
QXB49M	*	169.33	4.54	2.90	162.00	0.12	0.08
R39V6Q		165.16	0.37	0.24	161.29	-0.59	-0.36
RV6WLN	X	172.33	7.54	4.82	163.00	1.12	0.70
TZRBKE		164.50	-0.29	-0.18	160.26	-1.62	-1.00
UJ8REZ		164.67	-0.12	-0.08	160.67	-1.21	-0.75
VT48QG		166.97	2.18	1.39	162.23	0.36	0.22
W84GV3		163.80	-0.99	-0.63	164.55	2.67	1.66
WUH4JT		165.53	0.74	0.47	163.33	1.46	0.90
WZJFFQ		164.99	0.20	0.13	160.95	-0.93	-0.58
X2BND8		163.40	-1.39	-0.89	162.67	0.79	0.49
XKLN9U		162.43	-2.36	-1.51	160.43	-1.44	-0.90



Fasteners and Metals Interlaboratory Testing Program

Analysis 1201

Fastener Wedge Tensile (10 degree)
ASTM F606

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample X17			Sample X18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
XLXCKE		163.98	-0.81	-0.52	161.45	-0.42	-0.26
Z926HU		163.45	-1.35	-0.86	162.33	0.46	0.28
ZTPDU4	*	168.97	4.18	2.67	161.83	-0.04	-0.03

Summary Statistics

	Sample X17		Sample X18	
Grand Means	164.79	ksi	161.88	ksi
Std Dev Btwn Labs	1.56	ksi	1.61	ksi

Samples X17, X18 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 46 of 50 reporting participants

Comments on Assigned Data Flags for Test #1201

6PAQ8L (X) - Data for both samples are high.

PVRMH4 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

Q2JAW9 (X) - Data for both samples are low. Inconsistent within the determinations of sample X17.

RV6WLN (X) - Data for sample X17 are high.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1201

Fastener Wedge Tensile (10 degree)
ASTM F606

Cycle 154

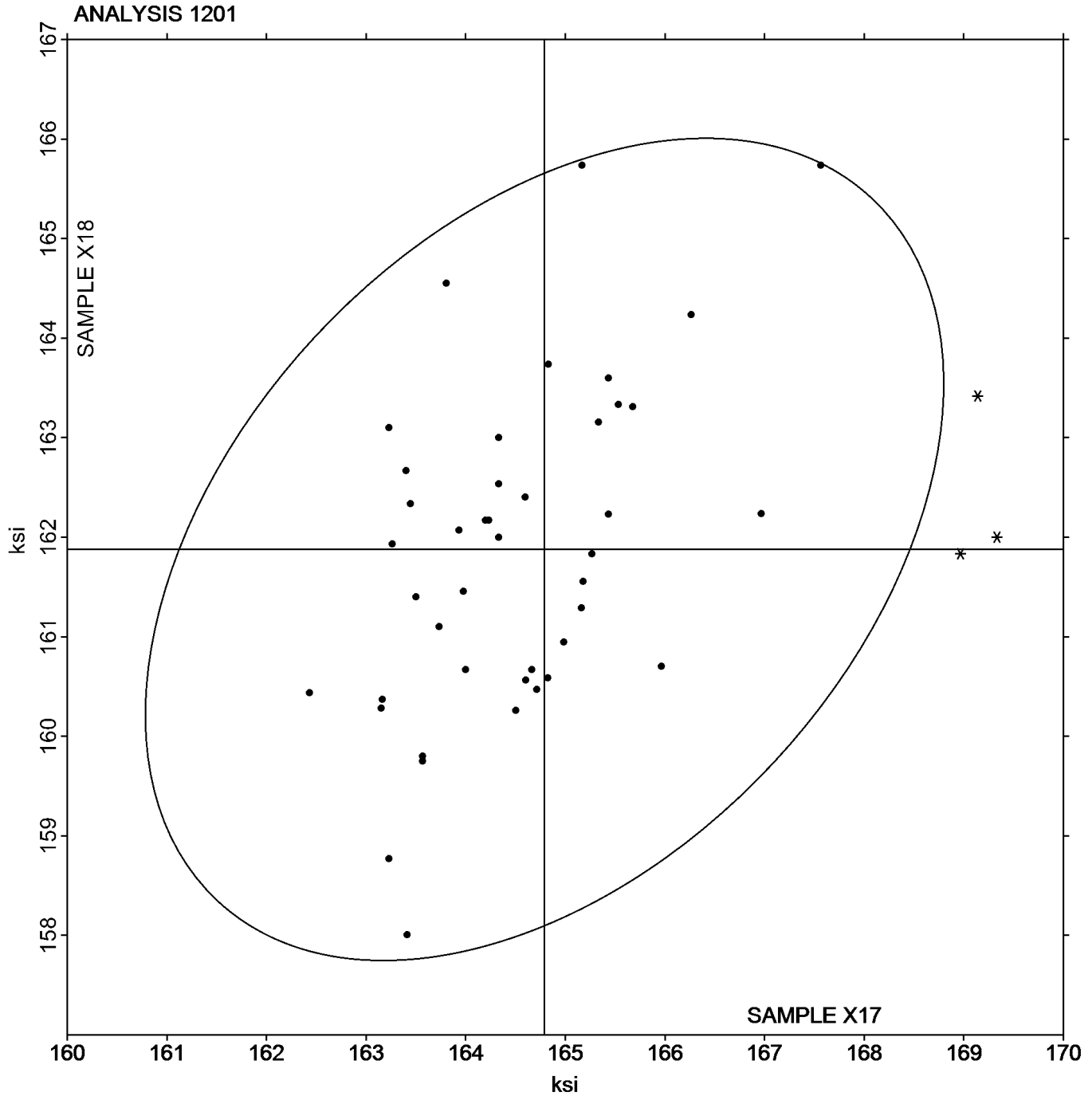
2nd Qtr
2026

SAMPLE X17

164.79 ksi

SAMPLE X18

161.88 ksi





Fasteners and Metals Interlaboratory Testing Program
Analysis 1202
Fastener Axial Tensile
ASTM F606

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample Q17			Sample Q18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2PB83N		165.67	0.78	0.62	163.00	0.28	0.20
36W87T		163.47	-1.42	-1.12	162.33	-0.39	-0.28
3BKU2X		165.07	0.18	0.14	164.47	1.74	1.26
3QCR3T		165.17	0.28	0.22	163.80	1.08	0.78
4Y67JK		164.14	-0.74	-0.59	163.51	0.79	0.57
69LEGC	X	120.17	-44.72	-35.30	117.82	-44.90	-32.54
6GYE2F		166.77	1.88	1.48	164.83	2.11	1.53
6PAQ8L	X	171.87	6.98	5.51	167.47	4.74	3.44
7CMQZJ		165.13	0.25	0.20	161.87	-0.86	-0.62
9DA2ZB		162.69	-2.19	-1.73	160.54	-2.18	-1.58
A8H2AL	X	189.80	24.91	19.66	184.53	21.81	15.81
C63TNQ		163.40	-1.48	-1.17	161.00	-1.72	-1.25
C6JMPZ		162.92	-1.97	-1.55	161.46	-1.26	-0.91
D6EPRA		164.47	-0.42	-0.33	163.73	1.01	0.73
DAAG4D	*	168.00	3.11	2.46	163.33	0.61	0.44
ERBWN6		166.33	1.45	1.14	162.67	-0.06	-0.04
F9QCK7		164.60	-0.29	-0.23	161.10	-1.62	-1.18
FN6KG3	X	121.51	-43.37	-34.23	118.92	-43.80	-31.74
G8DYFA	X	122.59	-42.29	-33.38	115.42	-47.30	-34.28
GE9464		164.83	-0.05	-0.04	161.27	-1.46	-1.05
HDXRQZ		163.83	-1.05	-0.83	159.83	-2.89	-2.09
JHP769		165.72	0.83	0.66	163.83	1.10	0.80
JX2ZH4		165.77	0.88	0.70	164.47	1.74	1.26
K7BNW3		166.20	1.31	1.04	165.63	2.91	2.11
KDPJNP		166.33	1.45	1.14	163.00	0.28	0.20
KDTWKY		163.57	-1.32	-1.04	162.53	-0.19	-0.14
KE28BB		164.67	-0.22	-0.17	163.67	0.94	0.68
KFGFF6		164.39	-0.50	-0.39	162.24	-0.49	-0.35
KV9DGZ		166.71	1.82	1.44	163.18	0.46	0.33
L9MZ2H		163.00	-1.89	-1.49	162.00	-0.72	-0.52
LBWZ9A		166.17	1.28	1.01	161.17	-1.56	-1.13
MFMGCM		166.20	1.31	1.04	164.03	1.31	0.95
MREFVD		163.83	-1.06	-0.84	162.20	-0.52	-0.38
MWAXFJ		163.13	-1.75	-1.38	161.77	-0.96	-0.69
NBB7K6		165.59	0.70	0.55	165.34	2.61	1.89
NXPU9V		166.14	1.25	0.99	162.23	-0.49	-0.36
P2EQ97		164.43	-0.45	-0.36	162.13	-0.59	-0.43
PDGNJZ		163.83	-1.05	-0.83	162.40	-0.32	-0.23
PPPUAT		165.53	0.65	0.51	163.97	1.24	0.90
PVRMH4	X	173.07	8.18	6.46	167.77	5.04	3.66
PZ3ZZ2		164.12	-0.76	-0.60	162.67	-0.05	-0.04
Q4L982	X	178.67	13.78	10.88	174.33	11.61	8.41
Q9CPDZ		164.93	0.05	0.04	162.00	-0.72	-0.52
QXB49M	X	172.00	7.11	5.62	165.33	2.61	1.89
VGVFA4		163.63	-1.26	-0.99	162.28	-0.45	-0.32
VT48QG		166.03	1.15	0.91	163.87	1.14	0.83
W84GV3		167.05	2.16	1.71	162.73	0.01	0.01



Fasteners and Metals Interlaboratory Testing Program
Analysis 1202
Fastener Axial Tensile
ASTM F606

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample Q17			Sample Q18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
WUH4JT		165.17	0.28	0.22	165.60	2.88	2.09
WZJFFQ		165.77	0.88	0.70	162.45	-0.27	-0.19
X2BND8		163.77	-1.12	-0.88	161.80	-0.92	-0.67
X2P6AL		164.69	-0.20	-0.15	163.17	0.45	0.33
XKLN9U		163.60	-1.29	-1.01	160.00	-2.72	-1.97
ZFL9MC		163.41	-1.47	-1.16	161.39	-1.33	-0.97

Summary Statistics

	Sample Q17		Sample Q18	
Grand Means	164.89	ksi	162.72	ksi
Std Dev Btwn Labs	1.27	ksi	1.38	ksi

Samples Q17, Q18 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 45 of 53 reporting participants

Comments on Assigned Data Flags for Test #1202

- 69LEGC (X) - Data for both samples are low.
- 6PAQ8L (X) - Data for both samples are high. Inconsistent within the determinations of sample Q17.
- A8H2AL (X) - Data for both samples are high.
- FN6KG3 (X) - Data for both samples are low.
- G8DYFA (X) - Data for both samples are low.
- PVRMH4 (X) - Data for both samples are high. Inconsistent within the determinations of sample Q17.
- Q4L982 (X) - Data for both samples are high. Inconsistent within the determinations of sample Q17.
- QXB49M (X) - Data for sample Q17 are high.

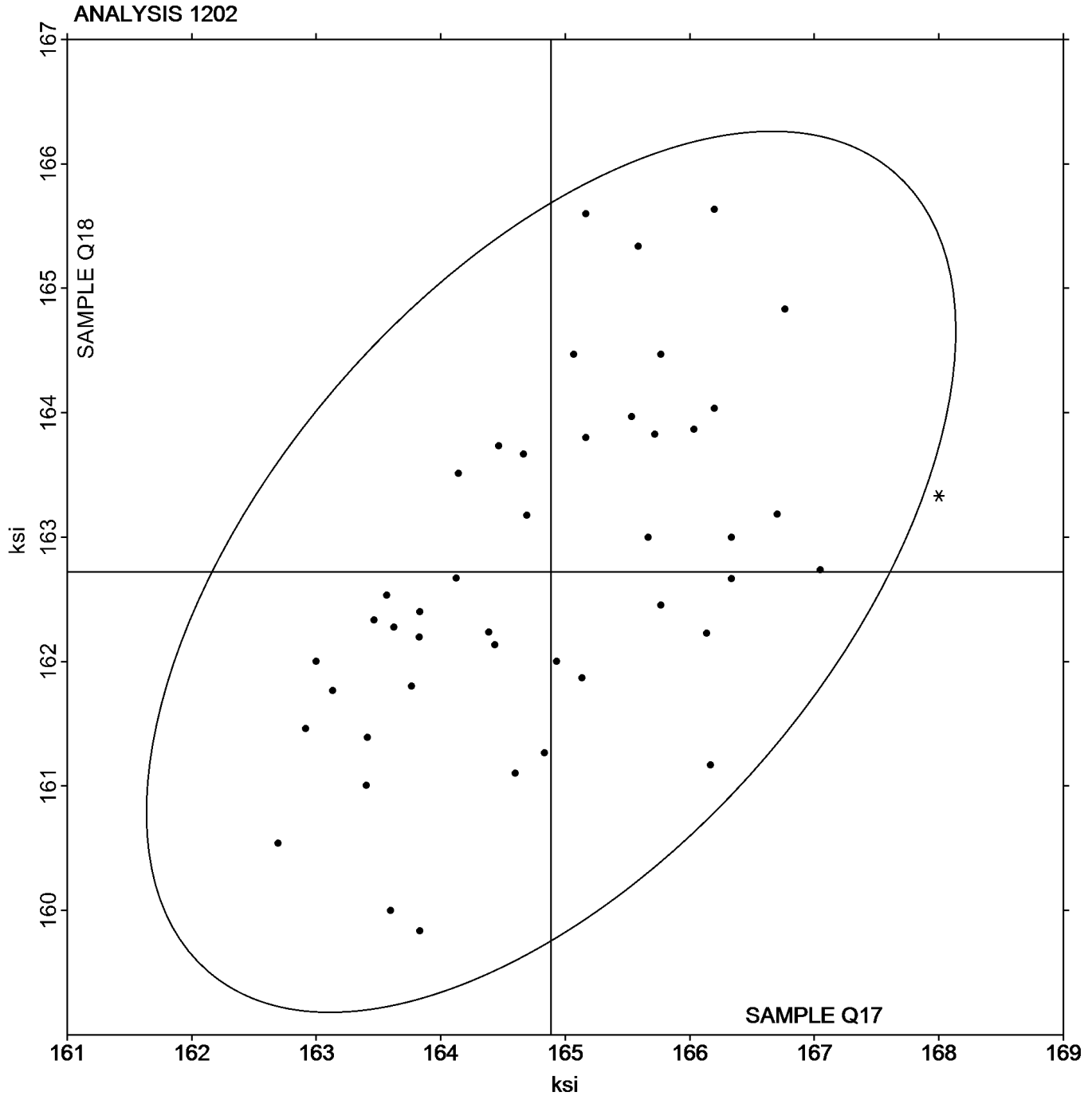


SAMPLE Q17

164.89 ksi

SAMPLE Q18

162.72 ksi



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1203****Fastener Wedge Tensile (10 degree) - Metric
ASTM F606M****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample B17			Sample B18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
7GDAX8		1,102	2	0.34	1,105	-3	-0.42
8JZ3TB		1,103	4	0.55	1,110	2	0.33
9D9EBA	*	1,089	-10	-1.59	1,123	16	2.35
AEF32Z		1,105	5	0.75	1,106	-2	-0.27
BD3J6A		1,101	2	0.24	1,111	3	0.43
FZCP8V		1,109	9	1.43	1,114	6	0.87
GE9464		1,105	5	0.82	1,108	0	-0.02
GLAG4L		1,088	-12	-1.79	1,097	-11	-1.64
H3WGAC		1,097	-3	-0.47	1,105	-3	-0.48
J6C9VY		1,104	4	0.67	1,102	-5	-0.82
JAAPCY		1,098	-1	-0.22	1,108	1	0.08
K7BNW3		1,114	14	2.12	1,118	11	1.60
K9E9WV		1,105	6	0.85	1,105	-3	-0.48
KDTWKY		1,104	5	0.69	1,105	-3	-0.45
MKERDZ		1,103	3	0.45	1,107	-1	-0.12
MREFVD		1,093	-7	-1.00	1,103	-5	-0.79
MWAXFJ		1,100	1	0.09	1,108	1	0.08
NXPU9V		1,094	-5	-0.83	1,111	3	0.43
PMD4X4		1,101	1	0.19	1,108	0	0.03
PVV88R		1,103	4	0.55	1,120	12	1.80
QLZRVT		1,088	-12	-1.84	1,100	-7	-1.13
XNLY4U		1,094	-6	-0.88	1,113	5	0.74
ZFL9MC		1,095	-5	-0.78	1,106	-2	-0.24
ZZRQLK		1,097	-2	-0.36	1,095	-13	-1.90

Summary Statistics

	Sample B17		Sample B18	
Grand Means	1,100	MPa	1,108	MPa
Stnd Dev Btrn Labs	7	MPa	7	MPa

Samples B17, B18 : M-10x1.5x70, M-10x1.5x75

Statistics based on 24 of 24 reporting participants

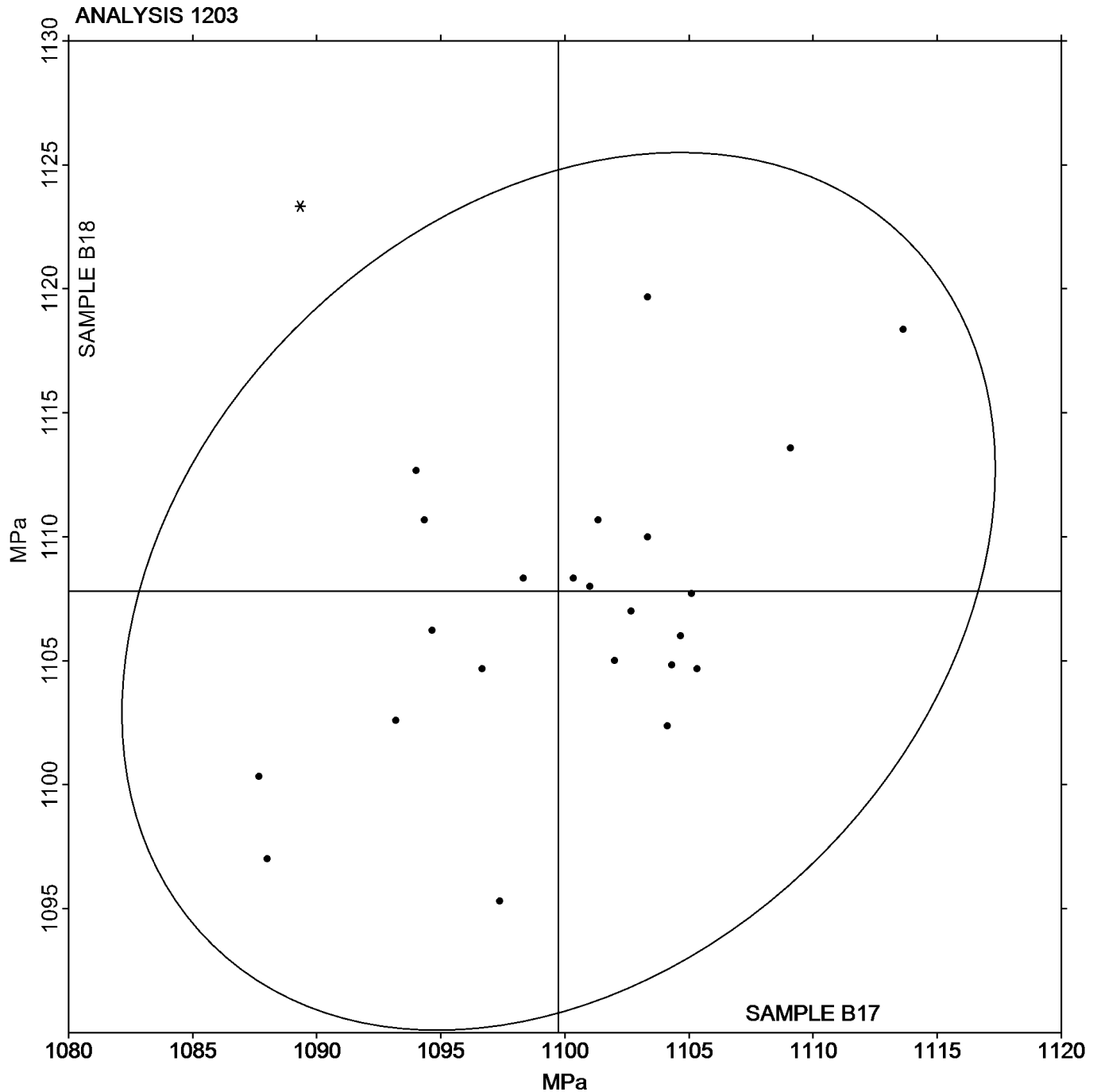


SAMPLE B17

1,100 MPa

SAMPLE B18

1,108 MPa





Fasteners and Metals Interlaboratory Testing Program

Analysis 1204

Fastener Axial Tensile - Metric
ASTM F606M

Cycle 154

2nd Qtr
2026

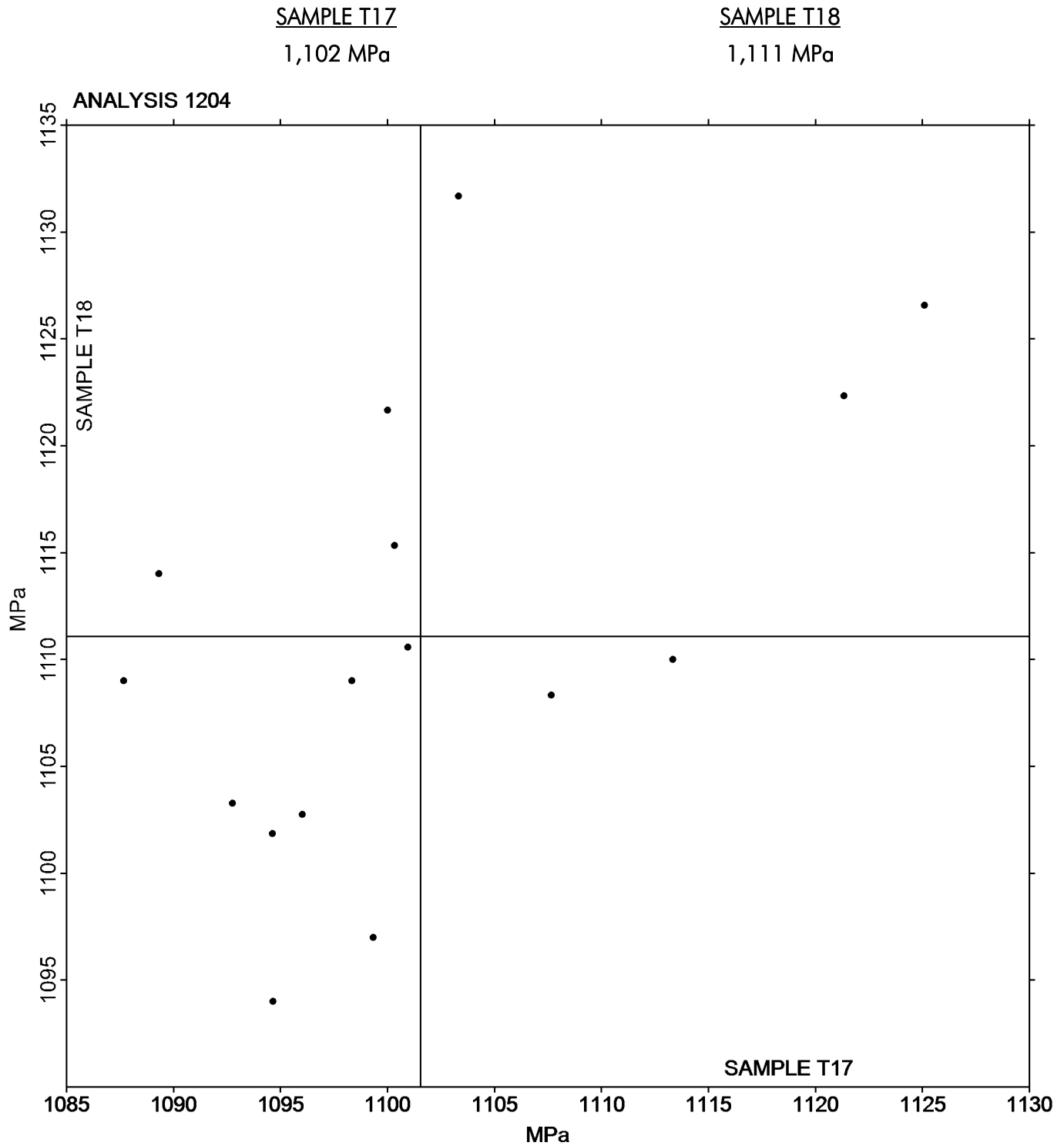
WebCode	Data Flag	Sample T17			Sample T18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
7TWH3N		1,125	24	2.22	1,127	15	1.48
8JZ3TB		1,113	12	1.11	1,110	-1	-0.10
9D9EBA		1,103	2	0.17	1,132	21	1.96
GE9464		1,101	-1	-0.06	1,111	-1	-0.05
GLAG4L		1,095	-7	-0.65	1,094	-17	-1.63
HJ2LYA		1,108	6	0.58	1,108	-3	-0.26
JAAPCY		1,089	-12	-1.15	1,114	3	0.28
KDTWKY		1,093	-9	-0.83	1,103	-8	-0.74
MREFVD		1,096	-6	-0.52	1,103	-8	-0.79
MWAXFJ		1,098	-3	-0.30	1,109	-2	-0.20
NXPU9V		1,088	-14	-1.31	1,109	-2	-0.20
Q4L982		1,100	-2	-0.15	1,122	11	1.01
Q6CF6J		1,099	-2	-0.21	1,097	-14	-1.34
RLB3ZB		1,121	20	1.86	1,122	11	1.07
YWXBWL		1,100	-1	-0.11	1,115	4	0.41
ZZRQLK		1,095	-7	-0.65	1,102	-9	-0.88

Summary Statistics

	Sample T17		Sample T18	
Grand Means	1,102	MPa	1,111	MPa
Std Dev Btwn Labs	11	MPa	10	MPa

Samples T17, T18 : M-10x1.5x70, M-10x1.5x75

Statistics based on 16 of 16 reporting participants





Fasteners and Metals Interlaboratory Testing Program

Analysis 1210

Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample G17			Sample G18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3BKU2X	X	33.54	-3.26	-4.45	35.10	-1.52	-1.93
4Y67JK		36.16	-0.65	-0.88	36.33	-0.29	-0.37
69LEGC		35.76	-1.04	-1.42	35.18	-1.43	-1.82
6GYE2F		37.75	0.95	1.30	37.34	0.73	0.92
6PAQ8L		36.85	0.05	0.06	36.78	0.17	0.21
9JC8JK		36.36	-0.44	-0.60	36.83	0.22	0.27
A8H2AL		36.88	0.07	0.10	38.00	1.38	1.76
AEF32Z		37.59	0.78	1.07	36.88	0.27	0.34
BR4F2F		37.34	0.53	0.73	37.47	0.85	1.08
BRZVDD		36.81	0.01	0.01	36.84	0.22	0.28
C6JMPZ		37.21	0.41	0.56	36.34	-0.28	-0.35
D6HAGY		37.04	0.24	0.33	37.81	1.20	1.52
EFVV46	*	35.30	-1.50	-2.05	34.48	-2.14	-2.72
ERBWN6		37.25	0.45	0.61	36.67	0.05	0.07
F9QCK7	X	33.64	-3.17	-4.32	32.85	-3.77	-4.79
FN6KG3		36.83	0.02	0.03	36.38	-0.23	-0.30
FZCP8V		37.20	0.40	0.54	36.53	-0.09	-0.12
GE9464		36.73	-0.07	-0.10	35.36	-1.26	-1.60
H3WGAC		37.07	0.27	0.36	37.20	0.58	0.74
H7WUFU3		36.62	-0.18	-0.25	36.13	-0.49	-0.62
HDXRQZ		36.38	-0.43	-0.58	35.31	-1.30	-1.66
JHP769		37.04	0.23	0.32	36.79	0.17	0.22
JX2ZH4		37.60	0.80	1.09	37.01	0.39	0.50
K7BNW3		35.86	-0.94	-1.28	35.54	-1.08	-1.37
KDTWKY		36.71	-0.09	-0.12	36.08	-0.53	-0.68
KFGFF6	*	34.82	-1.99	-2.71	36.41	-0.20	-0.26
KV9DGZ		37.40	0.60	0.82	36.99	0.38	0.48
L9MZ2H		36.06	-0.75	-1.02	36.86	0.25	0.31
LBWZ9A		37.22	0.42	0.57	37.35	0.73	0.93
LFRRG8		37.28	0.48	0.65	36.90	0.28	0.36
M8GQV7		36.95	0.15	0.20	37.30	0.68	0.87
MKERDZ		37.31	0.51	0.70	36.89	0.27	0.34
MNE49Z		37.09	0.29	0.40	36.41	-0.21	-0.27
MREFVD		35.91	-0.90	-1.22	35.66	-0.96	-1.22
MWAXFJ		36.80	0.00	0.00	35.81	-0.80	-1.02
NBB7K6		37.38	0.58	0.79	37.59	0.97	1.23
NXPU9V	X	39.01	2.21	3.02	39.37	2.75	3.50
PDGNJZ	*	35.27	-1.53	-2.09	36.80	0.18	0.23
PME26T		36.74	-0.06	-0.08	37.38	0.76	0.96
PPPUAT		37.74	0.93	1.28	36.52	-0.10	-0.12
PQZFYU		35.11	-1.69	-2.31	35.65	-0.97	-1.23
PZ3ZZ2	*	36.63	-0.18	-0.24	34.69	-1.92	-2.44
Q2JAW9		37.32	0.52	0.71	37.46	0.84	1.07
Q9CPDZ		37.23	0.43	0.59	36.37	-0.25	-0.31
R6RX2X		36.72	-0.08	-0.11	37.31	0.69	0.88
UJ8REZ		37.39	0.58	0.80	37.13	0.51	0.65
VGVFA4		36.56	-0.24	-0.33	37.00	0.38	0.49



Fasteners and Metals Interlaboratory Testing Program
Analysis 1210

Cycle 154
2nd Qtr
2026

Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G17			Sample G18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
WZJFFQ		37.15	0.35	0.47	36.42	-0.20	-0.25
XBFR2H		37.43	0.62	0.85	36.44	-0.17	-0.22
XNLY4U		37.71	0.90	1.23	37.24	0.62	0.79
YWXBWL		35.49	-1.32	-1.79	36.50	-0.12	-0.15
Z926HU		37.28	0.47	0.64	36.51	-0.10	-0.13
ZZRQLK		37.83	1.03	1.40	37.98	1.36	1.73

Summary Statistics

	Sample G17		Sample G18	
Grand Means	36.80	HRC	36.62	HRC
Std Dev Btwn Labs	0.73	HRC	0.79	HRC

Samples G17, G18 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 50 of 53 reporting participants

Comments on Assigned Data Flags for Test #1210

3BKU2X (X) - Data for sample G17 are low. Inconsistent within the determinations of both samples.

F9QCK7 (X) - Data for both samples are low. Inconsistent within the determinations of both samples.

NXPU9V (X) - Data for both samples are high. Inconsistent within the determinations of sample G17.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1211

Vickers Hardness: Externally Threaded Fasteners
ASTM E92

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample V17			Sample V18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2PB83N		370.81	1.97	0.43	374.44	4.11	0.64
4G6CWK		376.44	7.60	1.65	382.44	12.11	1.87
6V79TR		371.50	2.66	0.58	371.63	1.30	0.20
7GDAX8		374.69	5.85	1.27	381.81	11.49	1.77
8JZ3TB		362.75	-6.09	-1.33	362.88	-7.45	-1.15
AK3TPF		370.31	1.47	0.32	370.19	-0.14	-0.02
BD3J6A		364.25	-4.59	-1.00	367.19	-3.14	-0.48
C6JMPZ		369.21	0.37	0.08	364.66	-5.66	-0.87
EB4NKV		365.84	-3.00	-0.65	366.06	-4.26	-0.66
GLAG4L		370.74	1.90	0.41	374.32	4.00	0.62
H7WUF3		359.19	-9.65	-2.10	358.44	-11.89	-1.84
J6C9VY		367.63	-1.21	-0.26	368.00	-2.32	-0.36
JAAPCY		365.94	-2.90	-0.63	364.94	-5.39	-0.83
JX2ZH4		367.13	-1.71	-0.37	370.00	-0.32	-0.05
K6GRJ2		368.13	-0.71	-0.16	369.31	-1.01	-0.16
RPENWN		374.54	5.70	1.24	375.73	5.41	0.84
WUH4JT		374.54	5.70	1.24	377.92	7.60	1.17
ZZRQLK		365.50	-3.34	-0.73	365.88	-4.45	-0.69

Summary Statistics

	Sample V17		Sample V18	
Grand Means	368.84	HV	370.32	HV
Std Dev Btwn Labs	4.59	HV	6.47	HV

Samples V17, V18 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 18 of 18 reporting participants

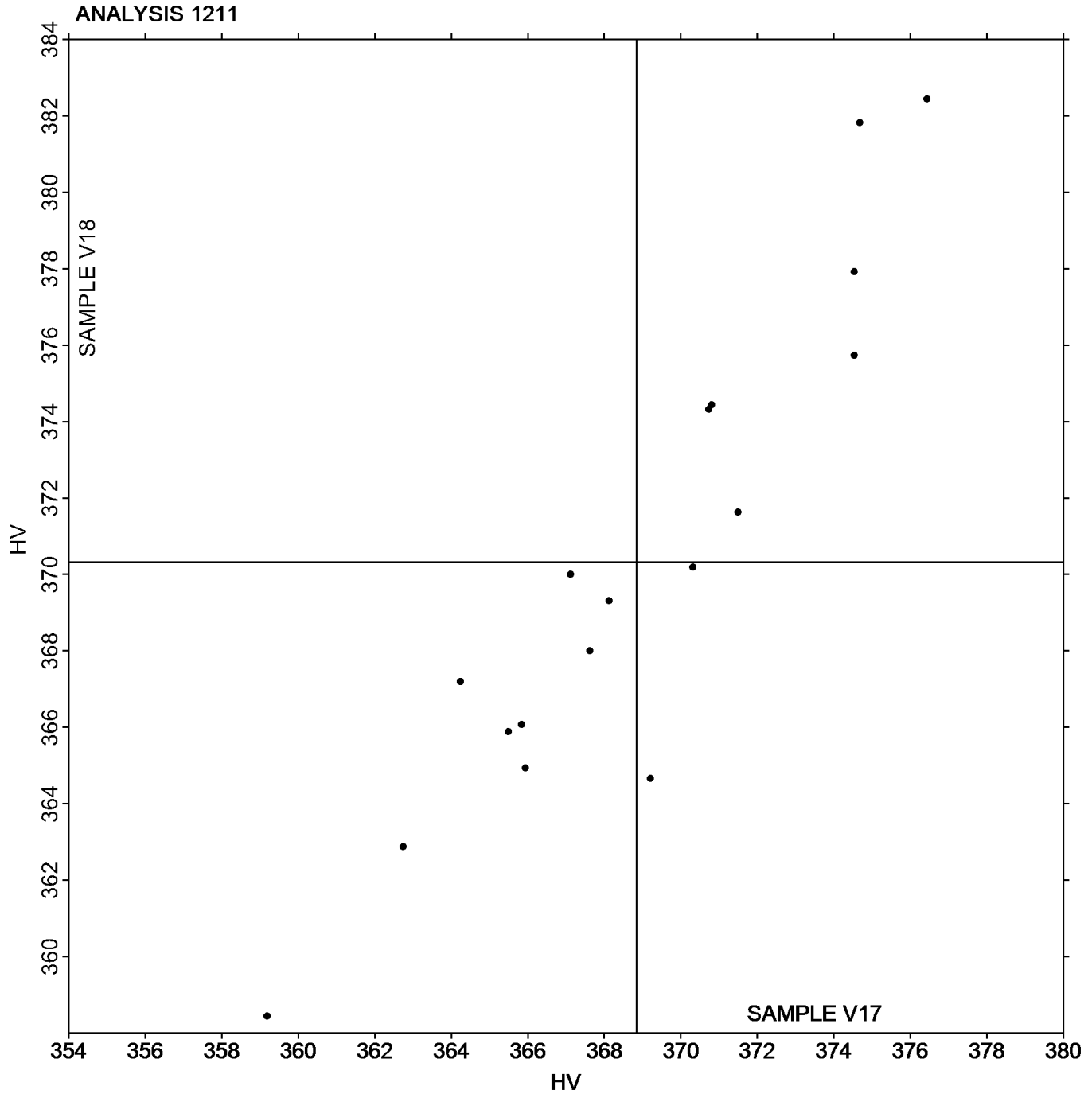


SAMPLE V17

368.84 HV

SAMPLE V18

370.32 HV





Fasteners and Metals Interlaboratory Testing Program
Analysis 1220
Fastener Double Shear
NASM 1312-13

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample Z17			Sample Z18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
69LEGC		21,737	267	0.52	21,815	628	1.39
6GYE2F		21,380	-90	-0.18	21,190	3	0.01
9NUHHA		20,783	-687	-1.35	20,733	-454	-1.00
FN6KG3		21,720	250	0.49	21,757	570	1.26
JHP769		22,351	881	1.73	21,711	524	1.16
KFGFF6		21,793	323	0.63	21,737	550	1.22
KV9DGZ		21,100	-370	-0.73	20,800	-387	-0.86
L9MZ2H		21,019	-451	-0.88	20,891	-296	-0.65
PDGNJZ		20,923	-547	-1.07	20,910	-277	-0.61
PPPUAT		21,117	-353	-0.69	20,570	-617	-1.37
PZ3ZZ2		22,246	776	1.52	20,973	-214	-0.47
XNLY4U		21,470	0	0.00	21,158	-29	-0.06

Summary Statistics

Sample Z17				Sample Z18			
Grand Means	21,470	1b		21,187	1b		
Std Dev Btwn Labs	510	1b		452	1b		

Samples Z17, Z18 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 12 of 12 reporting participants



Analysis 1220

2nd Qtr

Fastener Double Shear
NASM 1312-13

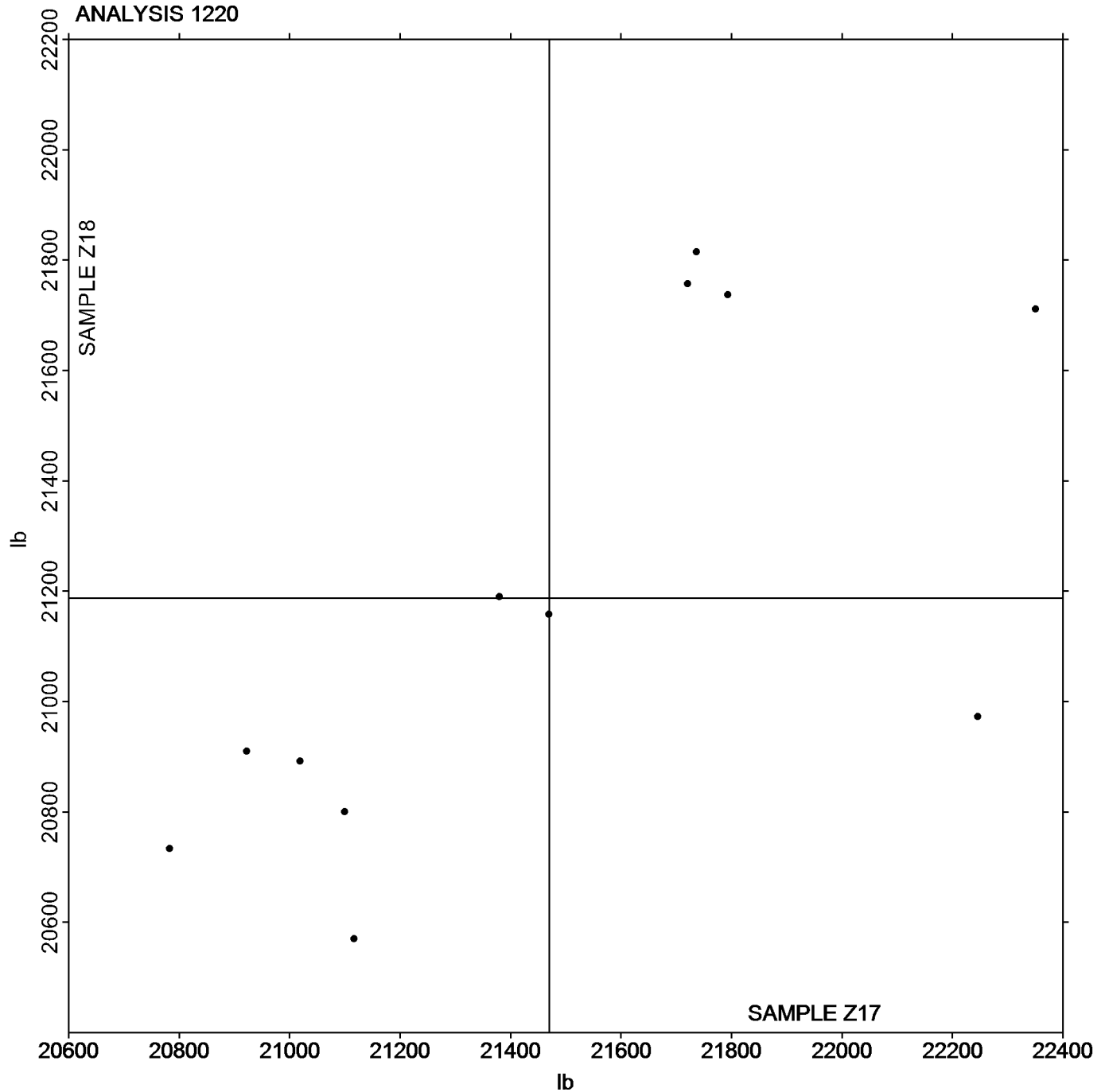
2026

SAMPLE Z17

SAMPLE Z18

21,470 lb

21,187 lb





Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2PB83N		54.90	0.22	0.37	61.20	0.43	1.03
2XZ2TQ		54.99	0.30	0.52	61.10	0.33	0.79
3GPPQY	*	53.44	-1.24	-2.11	59.72	-1.05	-2.53
3QCR3T		55.36	0.68	1.15	61.46	0.69	1.66
3QRZ72		54.60	-0.08	-0.14	60.22	-0.55	-1.32
3YM4ZD		54.02	-0.66	-1.12	60.50	-0.27	-0.65
43NERK		55.10	0.42	0.71	61.00	0.23	0.55
49AFL4		54.64	-0.04	-0.07	60.96	0.19	0.46
4HHVTB		53.78	-0.90	-1.53	59.90	-0.87	-2.09
4PFBQW		54.74	0.06	0.10	60.88	0.11	0.26
6KJ8CH		54.72	0.04	0.06	60.70	-0.07	-0.17
6ZAGQ8		55.42	0.74	1.25	61.20	0.43	1.03
796LF3	*	55.22	0.54	0.91	61.80	1.03	2.48
79K29A		55.12	0.44	0.74	61.14	0.37	0.89
7CMQZJ		54.02	-0.66	-1.12	60.12	-0.65	-1.56
7GV4WW		54.94	0.26	0.44	61.10	0.33	0.79
7M2WN7		53.44	-1.24	-2.11	60.04	-0.73	-1.76
7P8FPM		54.08	-0.60	-1.02	60.94	0.17	0.41
82FHPC		55.10	0.42	0.71	61.32	0.55	1.32
8GR6QT		55.00	0.32	0.54	61.30	0.53	1.28
8V9ZFC		54.78	0.10	0.17	61.16	0.39	0.94
9DA2ZB		53.66	-1.02	-1.74	60.48	-0.29	-0.70
9FCYDN	X	60.60	5.92	10.05	53.74	-7.03	-16.91
9NUHHA		55.06	0.38	0.64	60.84	0.07	0.17
9R8C9E		54.60	-0.08	-0.14	60.40	-0.37	-0.89
9UXA2E		55.38	0.70	1.19	61.00	0.23	0.55
9V4WCY		53.81	-0.87	-1.48	60.74	-0.03	-0.07
9YPLWB		55.50	0.82	1.39	61.30	0.53	1.28
A6PE9H		54.76	0.08	0.13	61.36	0.59	1.42
ARMWLC		55.22	0.54	0.91	60.68	-0.09	-0.22
AUCB8E		55.28	0.60	1.02	61.34	0.57	1.37
B69MUR		54.66	-0.02	-0.04	60.52	-0.25	-0.60
B6JMRL	X	53.45	-1.23	-2.09	58.76	-2.01	-4.84
BDX9ZP		54.62	-0.06	-0.11	60.88	0.11	0.26
BK2FHD		54.60	-0.08	-0.14	60.62	-0.15	-0.36
BYMLXM	*	54.80	0.12	0.20	60.00	-0.77	-1.85
C63QYM		55.32	0.64	1.08	61.22	0.45	1.08
C7A79D	X	82.51	27.82	47.26	86.31	25.54	61.43
C87LKB		54.72	0.04	0.06	60.26	-0.51	-1.23
CJ4F2E		54.86	0.18	0.30	60.70	-0.07	-0.17
CYE473		54.92	0.24	0.40	61.18	0.41	0.99
EA899Y	*	53.62	-1.06	-1.80	59.64	-1.13	-2.72
ECY62Y		54.78	0.10	0.17	61.06	0.29	0.70
EFAFR9		54.88	0.20	0.34	61.12	0.35	0.84
EJDZUM	*	53.20	-1.48	-2.52	60.32	-0.45	-1.08
EMDCJK		55.24	0.56	0.95	60.90	0.13	0.31
ENUACK		54.78	0.10	0.17	61.02	0.25	0.60



Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EVMT6Y		55.08	0.40	0.68	60.76	-0.01	-0.02
FA49L4		55.32	0.64	1.08	61.20	0.43	1.03
FDMZX7		54.06	-0.62	-1.06	60.80	0.03	0.07
FFMDCJ		55.20	0.52	0.88	60.40	-0.37	-0.89
FGZ2X4		54.40	-0.28	-0.48	61.00	0.23	0.55
G8DYFA	*	55.26	0.58	0.98	60.34	-0.43	-1.03
GE9464		55.20	0.52	0.88	60.82	0.05	0.12
GLAG4L		55.16	0.48	0.81	61.08	0.31	0.75
H2HUXP		54.60	-0.08	-0.14	60.88	0.11	0.26
H63JH2		53.64	-1.04	-1.77	60.68	-0.09	-0.22
H7WU3		54.00	-0.68	-1.16	60.20	-0.57	-1.37
H893K4		53.26	-1.42	-2.42	60.24	-0.53	-1.27
H9ZAH4		55.00	0.32	0.54	61.12	0.35	0.84
HYXZY4		54.74	0.06	0.10	60.56	-0.21	-0.50
HZQMZ8		55.68	1.00	1.69	61.32	0.55	1.32
J22X8B		54.52	-0.16	-0.28	60.40	-0.37	-0.89
J838E3		54.30	-0.38	-0.65	60.30	-0.47	-1.13
JX2ZH4		54.67	-0.02	-0.03	61.00	0.23	0.55
K43H9F	X	60.50	5.82	9.88	54.60	-6.17	-14.84
K82WUK	X	53.02	-1.66	-2.82	60.54	-0.23	-0.55
KCT4CT		54.42	-0.26	-0.45	59.90	-0.87	-2.09
KDTWKY		55.04	0.36	0.61	60.84	0.07	0.17
KP3JM4		54.38	-0.30	-0.51	60.72	-0.05	-0.12
KY8NDZ		54.70	0.02	0.03	60.78	0.01	0.02
L3LLFF		55.14	0.46	0.78	60.98	0.21	0.51
LAPHA4		54.60	-0.08	-0.14	60.48	-0.29	-0.70
LFRRG8		53.54	-1.14	-1.94	60.34	-0.43	-1.03
LK83UB		55.16	0.48	0.81	60.68	-0.09	-0.22
M4XMZU	X	61.14	6.46	10.97	55.10	-5.67	-13.64
M8GQV7		54.76	0.08	0.13	60.76	-0.01	-0.02
MBF4GA		54.70	0.02	0.03	60.08	-0.69	-1.66
MEAANK		54.40	-0.28	-0.48	60.82	0.05	0.12
MJ44N8		53.80	-0.88	-1.50	60.48	-0.29	-0.70
MPV9JW		54.42	-0.26	-0.45	60.94	0.17	0.41
MREFVD		54.84	0.16	0.27	60.64	-0.13	-0.31
MWAXFJ		55.04	0.36	0.61	61.00	0.23	0.55
MX7FHK		54.92	0.24	0.40	60.32	-0.45	-1.08
N47ATR		54.73	0.04	0.07	60.67	-0.10	-0.25
NUK9BX		54.46	-0.22	-0.38	60.50	-0.27	-0.65
NW6ZHT		55.14	0.46	0.78	61.08	0.31	0.75
P2EQ97		55.36	0.68	1.15	61.24	0.47	1.13
PDGNJZ		53.64	-1.04	-1.77	60.10	-0.67	-1.61
PQZFYU		55.16	0.48	0.81	60.96	0.19	0.46
PVRMH4		54.40	-0.28	-0.48	61.00	0.23	0.55
PXVKNP		55.26	0.58	0.98	60.84	0.07	0.17
Q4L982	X	53.98	-0.70	-1.19	59.36	-1.41	-3.39
QCEMNT		55.16	0.48	0.81	61.14	0.37	0.89



Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
QV98QU		55.02	0.34	0.57	61.06	0.29	0.70
QXB49M		54.86	0.18	0.30	60.74	-0.03	-0.07
RTEYTN		55.66	0.98	1.66	61.12	0.35	0.84
RUADJM		55.56	0.88	1.49	61.34	0.57	1.37
RV6WLN		55.04	0.36	0.61	60.74	-0.03	-0.07
RYKTP6		53.86	-0.82	-1.40	60.46	-0.31	-0.75
T3YM3G		54.80	0.12	0.20	60.72	-0.05	-0.12
TK4X99		54.58	-0.10	-0.17	60.70	-0.07	-0.17
TMAFAP		53.84	-0.84	-1.43	60.60	-0.17	-0.41
TTCFTR	*	53.11	-1.57	-2.67	60.03	-0.74	-1.77
TZRBKE		55.52	0.84	1.42	61.44	0.67	1.61
V3C2LA		54.94	0.26	0.44	60.64	-0.13	-0.31
V9EVV6		54.38	-0.30	-0.51	60.84	0.07	0.17
W4HQF7		54.94	0.26	0.44	61.00	0.23	0.55
WK8QEH		54.58	-0.10	-0.17	60.44	-0.33	-0.79
WPYXXQ		55.14	0.46	0.78	60.72	-0.05	-0.12
WXCXGU		55.00	0.32	0.54	61.24	0.47	1.13
WZJEJ7		53.40	-1.28	-2.18	60.16	-0.61	-1.47
WZJFFQ		53.76	-0.92	-1.57	59.92	-0.85	-2.04
X2P6AL		54.42	-0.26	-0.45	60.78	0.01	0.02
XD8PUH		54.22	-0.46	-0.79	61.08	0.31	0.75
XK3UJD		55.10	0.42	0.71	61.32	0.55	1.32
XLXCKE		54.24	-0.45	-0.76	60.20	-0.57	-1.37
XNLY4U		55.48	0.80	1.36	61.30	0.53	1.28
XWVDZ4		55.59	0.91	1.55	61.34	0.57	1.36
XY9GL		54.12	-0.56	-0.96	60.98	0.21	0.51
YM3GDT		55.04	0.36	0.61	60.76	-0.01	-0.02
YPC82C		55.20	0.52	0.88	61.34	0.57	1.37
YTUNXM		54.16	-0.52	-0.89	60.69	-0.08	-0.20
YXPHU4		55.20	0.51	0.87	60.36	-0.41	-0.98
YYGEKH		55.13	0.44	0.75	60.86	0.09	0.21
Z3VCNY		55.10	0.42	0.71	61.12	0.35	0.84
ZACUXZ		54.48	-0.20	-0.34	60.56	-0.21	-0.50
ZE6YQ4		53.85	-0.83	-1.41	60.68	-0.09	-0.23
ZM3UKL		54.80	0.12	0.20	60.76	-0.01	-0.02
ZMGBHM		54.88	0.20	0.34	60.94	0.17	0.41

Summary Statistics

	Sample E17		Sample E18	
Grand Means	54.68	HRC	60.77	HRC
Std Dev Btwn Labs	0.59	HRC	0.42	HRC

Samples E17, E18 : Steel, Steel

Statistics based on 123 of 130 reporting participants



Comments on Assigned Data Flags for Test #1301

9FCYDN (X) - Data appear to be transposed between samples.

B6JMRL (X) - Data for sample E18 are low. Inconsistent within the determinations of sample E18.

C7A79D (X) - Data for both samples are high.

K43H9F (X) - Data appear to be transposed between samples.

K82WUK (X) - Data for sample E17 are low.

M4XMZU (X) - Data appear to be transposed between samples.

Q4L982 (X) - Data for sample E18 are low.

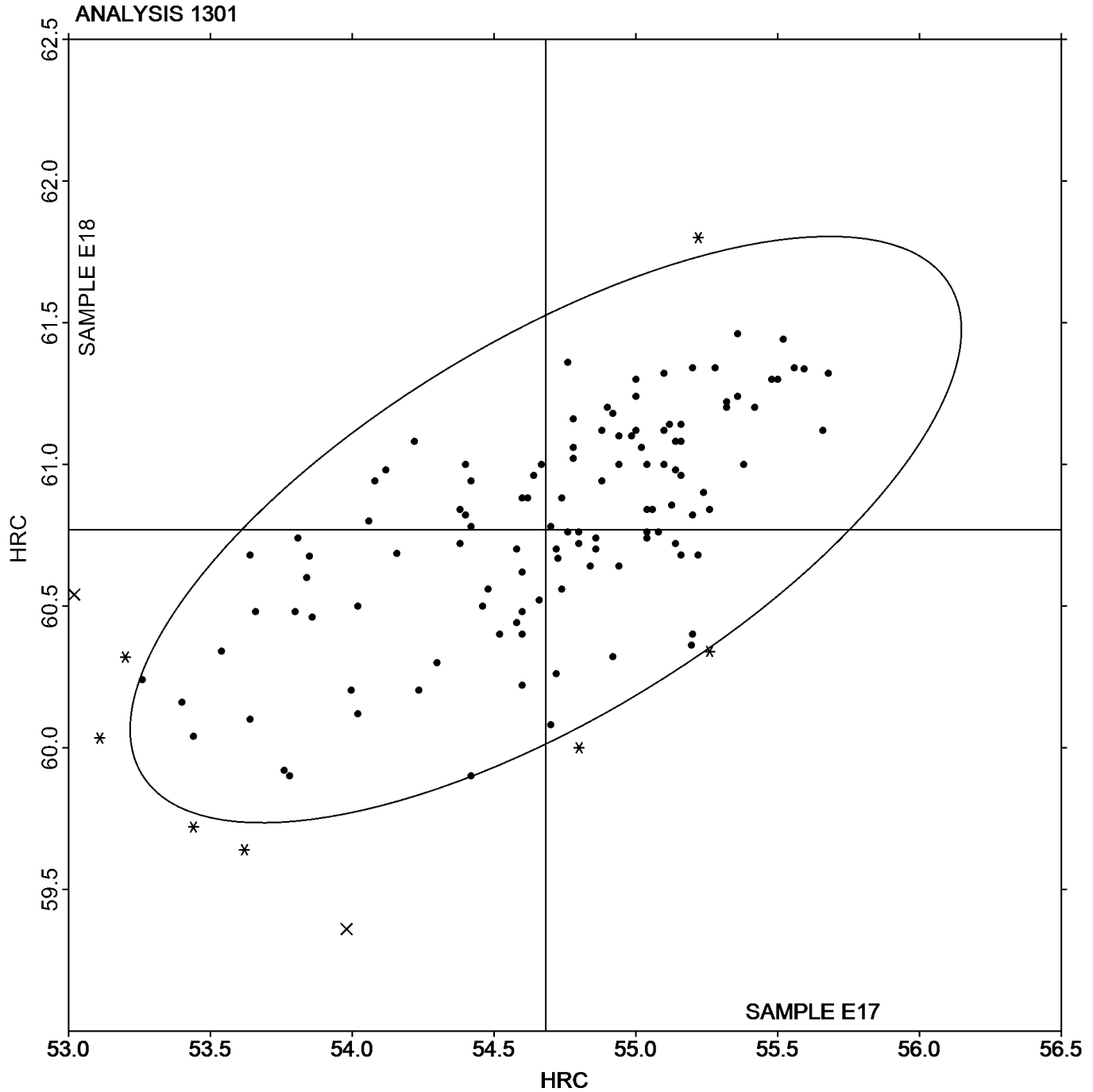


SAMPLE E17

54.68 HRC

SAMPLE E18

60.77 HRC





Fasteners and Metals Interlaboratory Testing Program

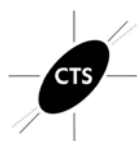
Analysis 1303

Rockwell Hardness: C Scale
ASTM E18

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2P7P4P		55.48	0.89	1.54	61.14	0.45	1.04
2XZ2TQ		55.01	0.42	0.73	60.98	0.29	0.67
3FEQQP		54.42	-0.17	-0.29	60.74	0.05	0.11
3QZR9J		54.68	0.09	0.16	60.42	-0.27	-0.63
42TXEM		55.45	0.86	1.49	61.35	0.66	1.53
6J8EDA		55.08	0.49	0.85	61.04	0.35	0.81
6LEPEJ	*	53.60	-0.99	-1.71	59.60	-1.09	-2.54
6NL8CF		54.16	-0.43	-0.74	60.38	-0.31	-0.73
6QKGCV		54.56	-0.03	-0.05	60.40	-0.29	-0.68
77WC6W		54.86	0.27	0.47	61.18	0.49	1.13
7TWH3N		54.20	-0.39	-0.67	61.12	0.43	0.99
89YNKX		53.34	-1.25	-2.16	59.90	-0.79	-1.84
8ELD68	X	55.08	0.49	0.85	59.36	-1.33	-3.10
8F2XTB		54.04	-0.55	-0.95	60.00	-0.69	-1.61
938RJD		55.02	0.43	0.75	60.84	0.15	0.34
BEEJYH		54.64	0.05	0.09	61.06	0.37	0.85
CGVC6G		54.40	-0.19	-0.33	60.44	-0.25	-0.59
CH8YPG		54.84	0.25	0.43	60.66	-0.03	-0.08
CVC8HT	X	52.72	-1.87	-3.24	60.82	0.13	0.30
CVWYH6		55.06	0.47	0.82	60.36	-0.33	-0.77
D627X6		54.58	-0.01	-0.02	60.70	0.01	0.02
D6EPRA		54.68	0.09	0.16	60.70	0.01	0.02
E42CQK		53.68	-0.91	-1.58	60.20	-0.49	-1.15
ED4XH7		55.24	0.65	1.13	61.10	0.41	0.95
EFVV46		55.06	0.47	0.82	60.28	-0.41	-0.96
ENRQ4N	*	55.18	0.59	1.02	60.00	-0.69	-1.61
ERBWN6		54.78	0.19	0.33	60.90	0.21	0.48
F9QCK7	*	53.62	-0.97	-1.68	59.48	-1.21	-2.82
G27V4F		54.72	0.13	0.23	60.72	0.03	0.06
GTX2B9		54.38	-0.21	-0.36	60.90	0.21	0.48
HDXRQZ	X	51.80	-2.79	-4.83	60.00	-0.69	-1.61
HQJ8UY		54.66	0.07	0.12	60.86	0.17	0.39
HZ8RA6		55.00	0.41	0.71	60.82	0.13	0.30
JQEWPf		55.10	0.51	0.88	61.00	0.31	0.72
JRV7N9		55.36	0.77	1.34	60.80	0.11	0.25
K9E9WV		54.70	0.11	0.19	60.60	-0.09	-0.22
KCT4ED		54.10	-0.49	-0.85	60.40	-0.29	-0.68
KDTWKY		53.48	-1.11	-1.92	60.28	-0.41	-0.96
KE28BB		55.00	0.41	0.71	61.00	0.31	0.72
KLDG8H		53.50	-1.09	-1.89	60.50	-0.19	-0.45
KUCW63		54.32	-0.27	-0.47	61.38	0.69	1.60
L7NJTU		54.66	0.07	0.12	60.66	-0.03	-0.07
LBWZ9A		55.04	0.45	0.78	61.32	0.63	1.46
MD3P6R		53.46	-1.13	-1.96	60.74	0.05	0.11
MEX97T		55.46	0.87	1.51	61.24	0.55	1.27
MHCYFU		54.54	-0.05	-0.09	60.48	-0.21	-0.49
MREFVD		53.68	-0.91	-1.58	60.38	-0.31	-0.73



Fasteners and Metals Interlaboratory Testing Program
Analysis 1303
Rockwell Hardness: C Scale
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
N47ATR		54.54	-0.05	-0.09	61.28	0.59	1.37
N63RVU		54.26	-0.33	-0.57	60.62	-0.07	-0.17
NXPU9V		54.00	-0.59	-1.02	60.14	-0.55	-1.29
NYWWBU		54.90	0.31	0.54	60.54	-0.15	-0.36
PVV88R		54.66	0.07	0.12	60.92	0.23	0.53
QUDNPT		54.98	0.39	0.68	61.30	0.61	1.41
QUVUVJ		54.52	-0.07	-0.12	60.84	0.15	0.34
R3H8CU		54.48	-0.11	-0.19	61.02	0.33	0.76
RNNFY7		54.26	-0.33	-0.57	60.46	-0.23	-0.54
U4UJDW		54.76	0.17	0.30	61.00	0.31	0.72
URCYTZ		54.56	-0.03	-0.05	59.96	-0.73	-1.70
UWRA84		54.06	-0.53	-0.92	60.30	-0.39	-0.91
V9FVP4		54.90	0.31	0.54	60.50	-0.19	-0.45
VUJGRV	X	52.46	-2.13	-3.69	58.62	-2.07	-4.82
W3PVRP		54.90	0.31	0.54	60.40	-0.29	-0.68
WPH6WG		55.60	1.01	1.75	61.38	0.69	1.60
X6UQ7Y		55.22	0.63	1.09	60.62	-0.07	-0.17
XWVDZ4		54.96	0.37	0.64	61.02	0.33	0.76
Y63GF2		55.20	0.61	1.05	61.30	0.60	1.40
YN2FW2		54.48	-0.11	-0.19	60.98	0.29	0.67
Z86P7X	*	53.01	-1.58	-2.74	60.40	-0.29	-0.67
ZFL9MC		54.80	0.21	0.36	60.98	0.29	0.67
ZMLKLU		55.04	0.45	0.78	60.70	0.01	0.02

Summary Statistics

	Sample E17		Sample E18	
Grand Means	54.59	HRC	60.69	HRC
Stnd Dev Btwn Labs	0.58	HRC	0.43	HRC

Samples E17, E18 : Steel, Steel

Statistics based on 66 of 70 reporting participants

Comments on Assigned Data Flags for Test #1303

- 8ELD68 (X) - Data for sample E18 are low. Inconsistent within the determinations of sample E18.
- CVC8HT (X) - Data for sample E17 are low.
- HDXRQZ (X) - Data for sample E17 are low. Inconsistent within the determinations of sample E17.
- VUJGRV (X) - Data for both samples are low.

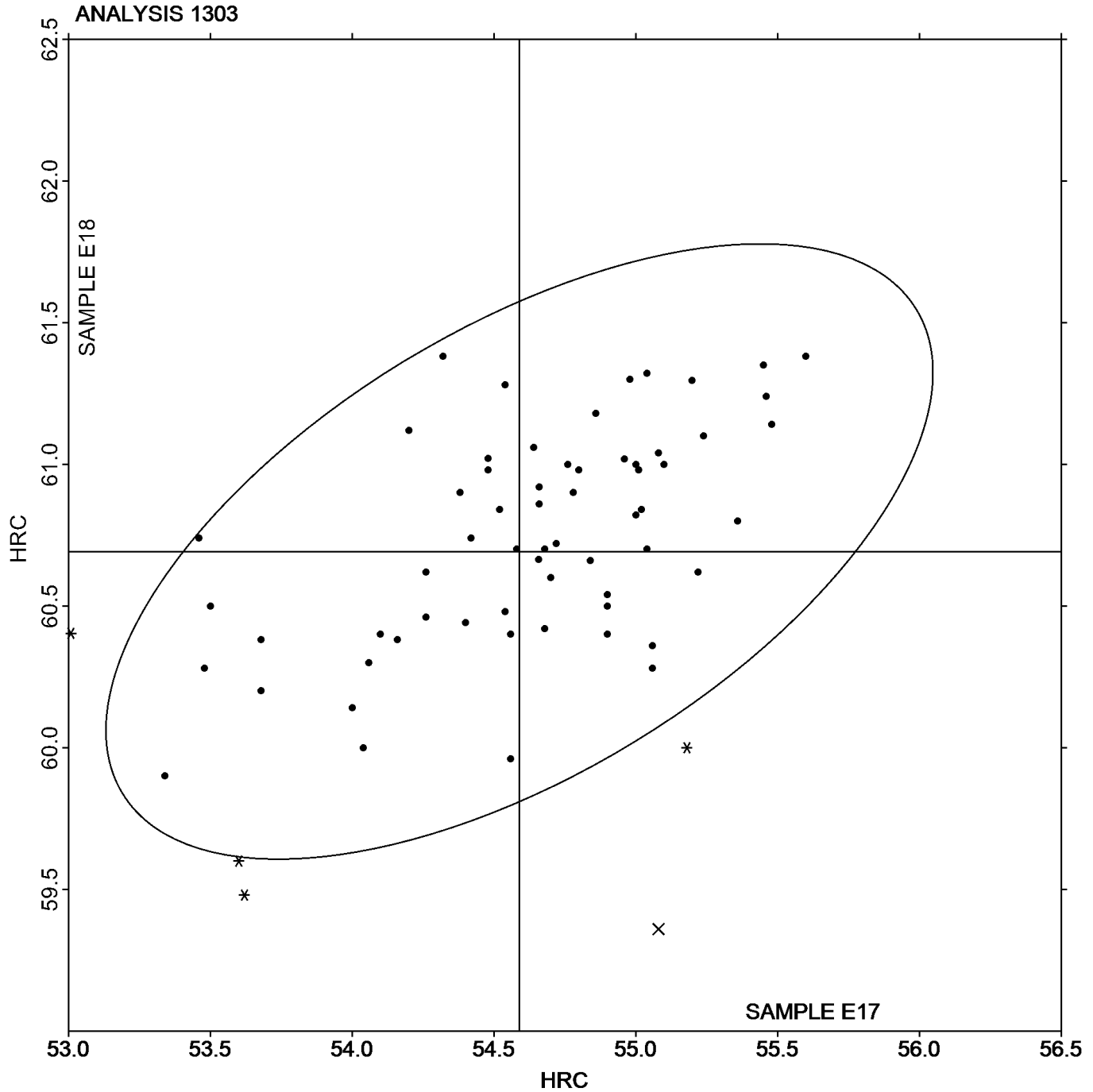


SAMPLE E17

54.59 HRC

SAMPLE E18

60.69 HRC





Fasteners and Metals Interlaboratory Testing Program

Analysis 1311

Vickers Hardness 10 kgf
ASTM E92, ISO 6507-1

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3GPPQY		604.22	3.20	0.24	746.66	8.62	0.50
3QZR9J		592.40	-8.62	-0.63	742.00	3.96	0.23
49AFL4		617.80	16.78	1.24	749.60	11.56	0.67
7CMQZJ		603.90	2.88	0.21	734.02	-4.02	-0.23
7GV4WW		609.40	8.38	0.62	757.00	18.96	1.09
7J7WYB		625.00	23.98	1.77	767.40	29.36	1.69
9FCYDN		608.60	7.58	0.56	736.20	-1.84	-0.11
BTCGY9	*	578.85	-22.17	-1.63	756.09	18.05	1.04
BYMLXM		612.60	11.58	0.85	739.20	1.16	0.07
CB6Z7E		602.20	1.18	0.09	732.60	-5.44	-0.31
CUGR7V		584.44	-16.58	-1.22	743.38	5.34	0.31
CVWYH6		606.00	4.98	0.37	769.20	31.16	1.80
DW6BXL		587.34	-13.68	-1.01	739.74	1.70	0.10
ECY62Y	*	635.36	34.34	2.53	776.02	37.98	2.19
J22X8B		602.42	1.40	0.10	741.94	3.90	0.22
JX2ZH4		602.40	1.38	0.10	732.20	-5.84	-0.34
KPZU8Z		595.80	-5.22	-0.38	722.80	-15.24	-0.88
LAPHAЕ		617.32	16.30	1.20	743.90	5.86	0.34
LX9YQH	X	625.60	24.58	1.81	812.20	74.16	4.28
MEX97T		603.00	1.98	0.15	728.00	-10.04	-0.58
MREFVD	*	590.00	-11.02	-0.81	767.80	29.76	1.72
NM6CQW		608.33	7.32	0.54	736.33	-1.71	-0.10
NYWWBU		595.80	-5.22	-0.38	739.00	0.96	0.06
Q4L982	*	577.76	-23.26	-1.71	683.46	-54.58	-3.15
QCEMNT		608.20	7.18	0.53	731.40	-6.64	-0.38
RFTKRA		610.98	9.96	0.73	750.00	11.96	0.69
RR7KPN		607.60	6.58	0.48	738.00	-0.04	0.00
TT96N9		575.00	-26.02	-1.92	723.00	-15.04	-0.87
UWRA84		602.06	1.04	0.08	720.46	-17.58	-1.01
UYVEAQ		620.80	19.78	1.46	748.60	10.56	0.61
V4AZ74		604.84	3.82	0.28	737.24	-0.80	-0.05
WK8QEH		592.20	-8.82	-0.65	719.40	-18.64	-1.07
WPH6WG		598.40	-2.62	-0.19	731.20	-6.84	-0.39
X2P6AL		606.14	5.12	0.38	733.46	-4.58	-0.26
X6UQ7Y		581.44	-19.58	-1.44	726.94	-11.10	-0.64
XWVDZ4		595.40	-5.62	-0.41	716.40	-21.64	-1.25
YCRRXC		584.00	-17.02	-1.25	721.00	-17.04	-0.98
YTUNXM		589.60	-11.42	-0.84	725.80	-12.24	-0.71

Summary Statistics

	Sample E17		Sample E18	
Grand Means	601.02	HV 10	738.04	HV 10
Std Dev Btwn Labs	13.58	HV 10	17.35	HV 10

Samples E17, E18 : Steel, Steel

Statistics based on 37 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1311

Vickers Hardness 10 kgf
ASTM E92, ISO 6507-1

Cycle 154

**2nd Qtr
2026**

Comments on Assigned Data Flags for Test #1311

LX9YQH (X) - Data for sample E18 are high.



Analysis 1311

2nd Qtr

Vickers Hardness 10 kgf

2026

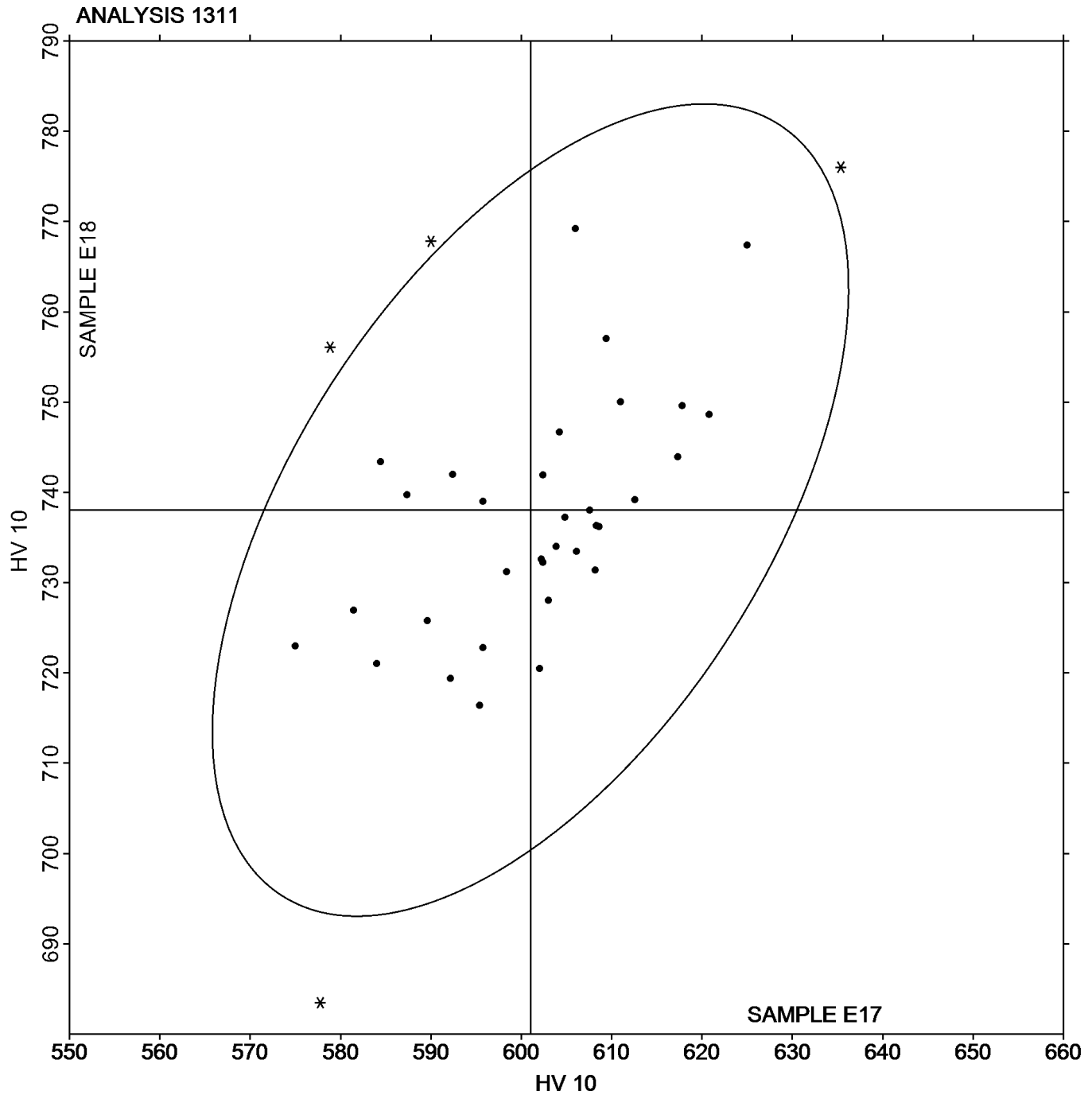
ASTM E92, ISO 6507-1

SAMPLE E17

SAMPLE E18

601.02 HV 10

738.04 HV 10





Fasteners and Metals Interlaboratory Testing Program
Analysis 1351
Rockwell Superficial Hardness (30N Scale)
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4HHVTB		71.54	-1.11	-1.87	76.64	-1.28	-2.15
4Y67JK		72.12	-0.53	-0.89	77.72	-0.20	-0.33
6PAQ8L		72.38	-0.27	-0.46	77.20	-0.72	-1.21
8GR6QT		72.78	0.13	0.22	77.94	0.02	0.04
9DA2ZB		73.68	1.03	1.73	78.34	0.42	0.71
9FCYDN		72.40	-0.25	-0.42	77.80	-0.12	-0.20
9UXA2E		73.08	0.43	0.72	77.64	-0.28	-0.47
AEF32Z		72.18	-0.47	-0.79	77.50	-0.42	-0.70
B69MUR		72.76	0.11	0.18	78.24	0.32	0.54
BEEJYH		72.72	0.07	0.12	78.44	0.53	0.89
CYE473		73.26	0.61	1.02	77.80	-0.12	-0.20
D627X6		72.20	-0.45	-0.76	77.40	-0.52	-0.87
D6EPRA		72.24	-0.41	-0.69	78.22	0.30	0.51
EFVV46		71.38	-1.27	-2.14	77.06	-0.86	-1.44
EMDCJK		73.90	1.25	2.10	78.46	0.54	0.91
ERBWN6		72.90	0.25	0.42	78.06	0.14	0.24
FDMZX7		73.26	0.61	1.02	78.90	0.98	1.66
FZCP8V		71.92	-0.73	-1.23	77.20	-0.72	-1.21
G8DYFA		73.42	0.77	1.29	78.44	0.52	0.88
GE9464		73.08	0.43	0.72	78.94	1.02	1.72
H63JH2		71.94	-0.71	-1.20	77.08	-0.84	-1.41
H893K4		72.36	-0.29	-0.49	77.52	-0.40	-0.67
JF2MA3		72.48	-0.17	-0.29	78.26	0.34	0.58
JQEWPF		73.50	0.85	1.43	78.70	0.78	1.32
JYDL96		72.40	-0.25	-0.42	77.24	-0.68	-1.14
K9E9WV		72.88	0.23	0.38	78.00	0.08	0.14
MREFVD		72.20	-0.45	-0.76	78.06	0.14	0.24
MWAXFJ		72.64	-0.01	-0.02	78.26	0.34	0.58
N47ATR		72.70	0.05	0.08	77.48	-0.44	-0.74
N6N4U3		73.24	0.59	0.99	78.12	0.21	0.35
NUK9BX		71.88	-0.77	-1.30	77.94	0.02	0.04
NXPU9V	*	71.62	-1.03	-1.74	77.94	0.02	0.04
NYWWBU		73.14	0.49	0.82	78.22	0.30	0.51
PDGNJZ		72.48	-0.17	-0.29	77.66	-0.26	-0.43
PNTDWW		73.14	0.49	0.82	78.52	0.60	1.02
PPPUAT	X	77.88	5.23	8.79	72.60	-5.32	-8.95
PQZFYU	*	71.38	-1.27	-2.14	76.34	-1.58	-2.66
PVRMH4		72.20	-0.45	-0.76	77.00	-0.92	-1.54
Q9CPDZ		73.00	0.35	0.59	77.80	-0.12	-0.20
QCEMNT		72.46	-0.19	-0.32	78.42	0.50	0.85
QV98QU		73.24	0.59	0.99	78.18	0.26	0.44
QW22EB	X	91.84	19.19	32.27	94.26	16.34	27.52
R39V6Q		72.86	0.21	0.35	78.72	0.80	1.35
TTCFTR		73.48	0.83	1.39	78.78	0.86	1.45
V3C2LA		72.86	0.21	0.35	77.64	-0.28	-0.47
X2P6AL		72.90	0.25	0.42	78.14	0.22	0.38
XLXCKE		72.50	-0.15	-0.26	78.18	0.26	0.44



Fasteners and Metals Interlaboratory Testing Program
Analysis 1351
Rockwell Superficial Hardness (30N Scale)
ASTM E18

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample E17			Sample E18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
XNLY4U		73.00	0.35	0.59	78.46	0.54	0.91
XWVDZ4		72.52	-0.13	-0.22	77.92	0.00	0.00
Y8UCDH		72.24	-0.41	-0.69	76.92	-1.00	-1.68
YTUNXM		72.58	-0.08	-0.13	77.75	-0.16	-0.27
YXPHU4	X	69.95	-2.70	-4.54	76.23	-1.69	-2.84
YYGEKH		73.57	0.91	1.54	78.65	0.73	1.23

Summary Statistics

	Sample E17		Sample E18	
Grand Means	72.65	HR30N	77.92	HR30N
Std Dev Btwn Labs	0.59	HR30N	0.59	HR30N

Samples E17, E18 : Steel, Steel

Statistics based on 50 of 53 reporting participants

Comments on Assigned Data Flags for Test #1351

- PPPUAT (X) - Data appear to be transposed between samples.
- QW22EB (X) - Data for both samples are high. Possible Systematic Error.
- YXPHU4 (X) - Data for both samples are low. Possible Systematic Error.

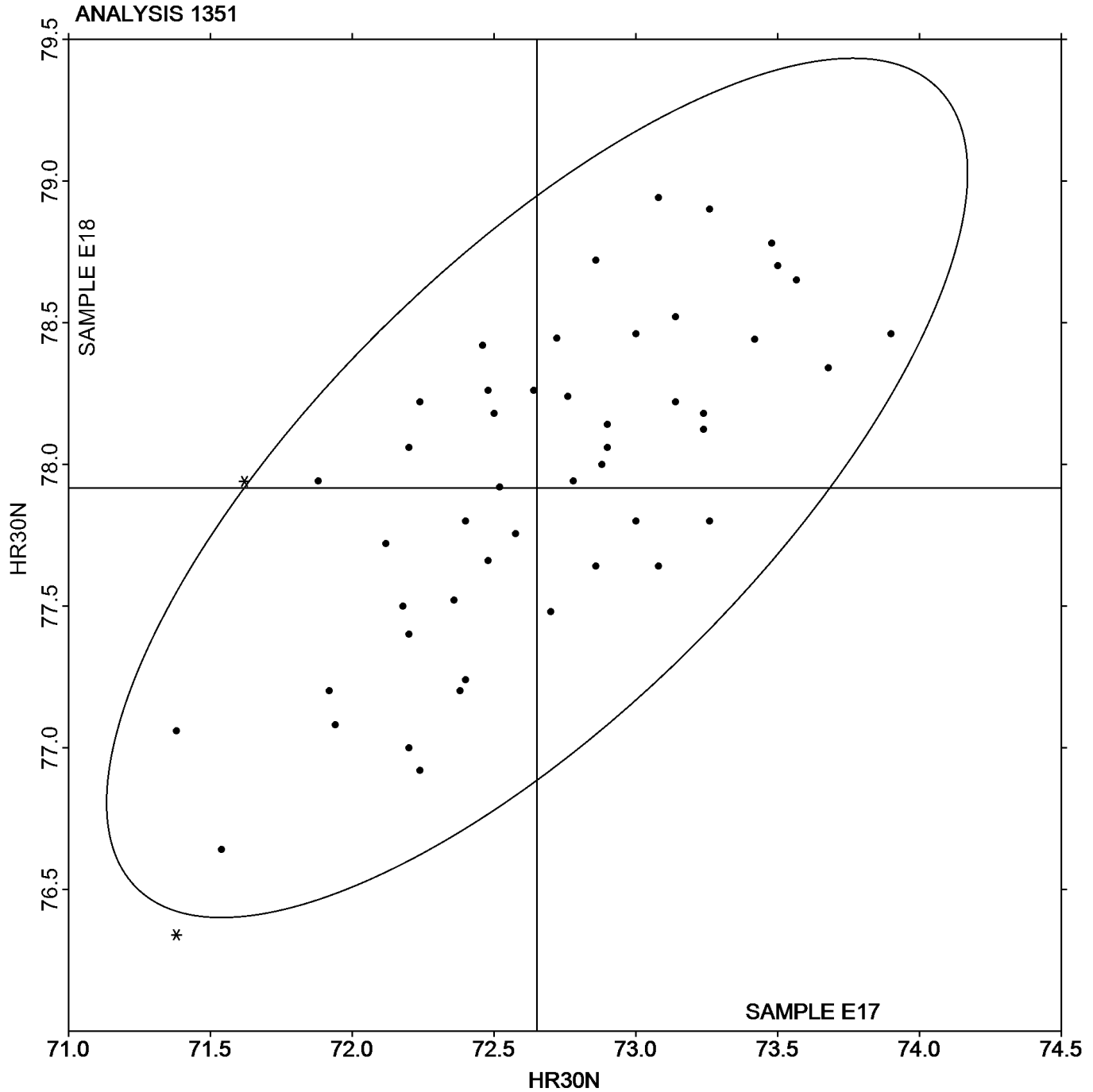


SAMPLE E17

72.65 HR30N

SAMPLE E18

77.92 HR30N





Fasteners and Metals Interlaboratory Testing Program

Analysis 1401

Total Case Depth
SAE J423, SAE J78

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample C17			Sample C18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4G6CWK		0.0226	-0.0020	-0.41	0.0274	-0.0022	-0.43
4HHVTB		0.0207	-0.0039	-0.82	0.0275	-0.0021	-0.41
7CMQZJ		0.0264	0.0018	0.39	0.0314	0.0018	0.36
9UXA2E	X	0.0293	0.0048	1.01	0.0156	-0.0140	-2.73
A7Z7CT		0.0265	0.0019	0.40	0.0300	0.0004	0.08
ARMWLC		0.0305	0.0059	1.26	0.0353	0.0057	1.10
BEUPDM		0.0217	-0.0028	-0.60	0.0285	-0.0011	-0.21
C6JMPZ	X	0.2370	0.2125	45.04	0.2441	0.2145	41.79
CB6Z7E		0.0319	0.0073	1.56	0.0370	0.0074	1.44
CGVC6G		0.0302	0.0056	1.19	0.0337	0.0040	0.79
CJG2MA		0.0274	0.0028	0.60	0.0304	0.0008	0.15
ECY62Y		0.0177	-0.0068	-1.45	0.0200	-0.0096	-1.87
EFVV46	*	0.0202	-0.0044	-0.93	0.0188	-0.0108	-2.10
ENRQ4N		0.0237	-0.0009	-0.18	0.0238	-0.0058	-1.13
ENUACK		0.0215	-0.0031	-0.65	0.0299	0.0003	0.06
F9QCK7	*	0.0358	0.0112	2.38	0.0364	0.0068	1.33
H7WUFU3		0.0291	0.0046	0.97	0.0317	0.0020	0.40
HJ2LYA		0.0175	-0.0071	-1.50	0.0214	-0.0082	-1.60
HZQMZ8		0.0183	-0.0062	-1.32	0.0271	-0.0025	-0.49
J22X8B		0.0290	0.0044	0.94	0.0364	0.0068	1.32
JF2MA3		0.0207	-0.0039	-0.82	0.0244	-0.0052	-1.00
JHP769		0.0270	0.0024	0.52	0.0310	0.0014	0.27
JQEWPF		0.0252	0.0006	0.14	0.0310	0.0014	0.27
K7BNW3		0.0272	0.0026	0.56	0.0282	-0.0014	-0.27
KDTWKY		0.0236	-0.0010	-0.21	0.0290	-0.0006	-0.11
L3LLFF		0.0150	-0.0096	-2.03	0.0196	-0.0100	-1.95
LR44NA		0.0277	0.0031	0.66	0.0349	0.0053	1.02
MREFVD		0.0216	-0.0030	-0.63	0.0265	-0.0031	-0.61
MWAXFJ		0.0271	0.0025	0.54	0.0338	0.0042	0.82
N63RVU		0.0188	-0.0058	-1.22	0.0210	-0.0086	-1.68
NUK9BX		0.0234	-0.0012	-0.24	0.0302	0.0006	0.12
NXPU9V		0.0300	0.0054	1.16	0.0384	0.0088	1.71
NYWWBU		0.0232	-0.0014	-0.29	0.0260	-0.0036	-0.70
PHJ88R		0.0277	0.0032	0.67	0.0301	0.0005	0.09
PVRMH4		0.0282	0.0037	0.78	0.0362	0.0066	1.29
QKM3JU		0.0143	-0.0102	-2.17	0.0191	-0.0105	-2.05
QV98QU		0.0326	0.0080	1.71	0.0352	0.0056	1.09
R6RX2X		0.0225	-0.0020	-0.43	0.0299	0.0003	0.06
TC77RT		0.0192	-0.0053	-1.13	0.0304	0.0008	0.15
TTCFTR		0.0288	0.0043	0.91	0.0366	0.0070	1.36
UB8GW9		0.0244	-0.0001	-0.03	0.0267	-0.0029	-0.57
UWRA84		0.0253	0.0008	0.16	0.0313	0.0017	0.33
W9YYX4		0.0190	-0.0056	-1.18	0.0270	-0.0026	-0.50
WUH4JT		0.0242	-0.0004	-0.07	0.0284	-0.0012	-0.23
XYY9GL		0.0270	0.0024	0.51	0.0356	0.0060	1.16
YYGEKH		0.0204	-0.0042	-0.88	0.0280	-0.0016	-0.31
ZFL9MC		0.0256	0.0010	0.22	0.0288	-0.0008	-0.16



Fasteners and Metals Interlaboratory Testing Program

Analysis 1401

Total Case Depth
SAE J423, SAE J78

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample C17			Sample C18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
ZMGBHM		0.0250	0.0005	0.10	0.0345	0.0049	0.95
ZZRQLK		0.0287	0.0041	0.87	0.0329	0.0033	0.64

Summary Statistics

	Sample C17		Sample C18	
Grand Means	0.0246	inches	0.0296	inches
Std Dev Btwn Labs	0.0047	inches	0.0051	inches

Samples C17, C18 : Steel, Steel

Statistics based on 47 of 49 reporting participants

Comments on Assigned Data Flags for Test #1401

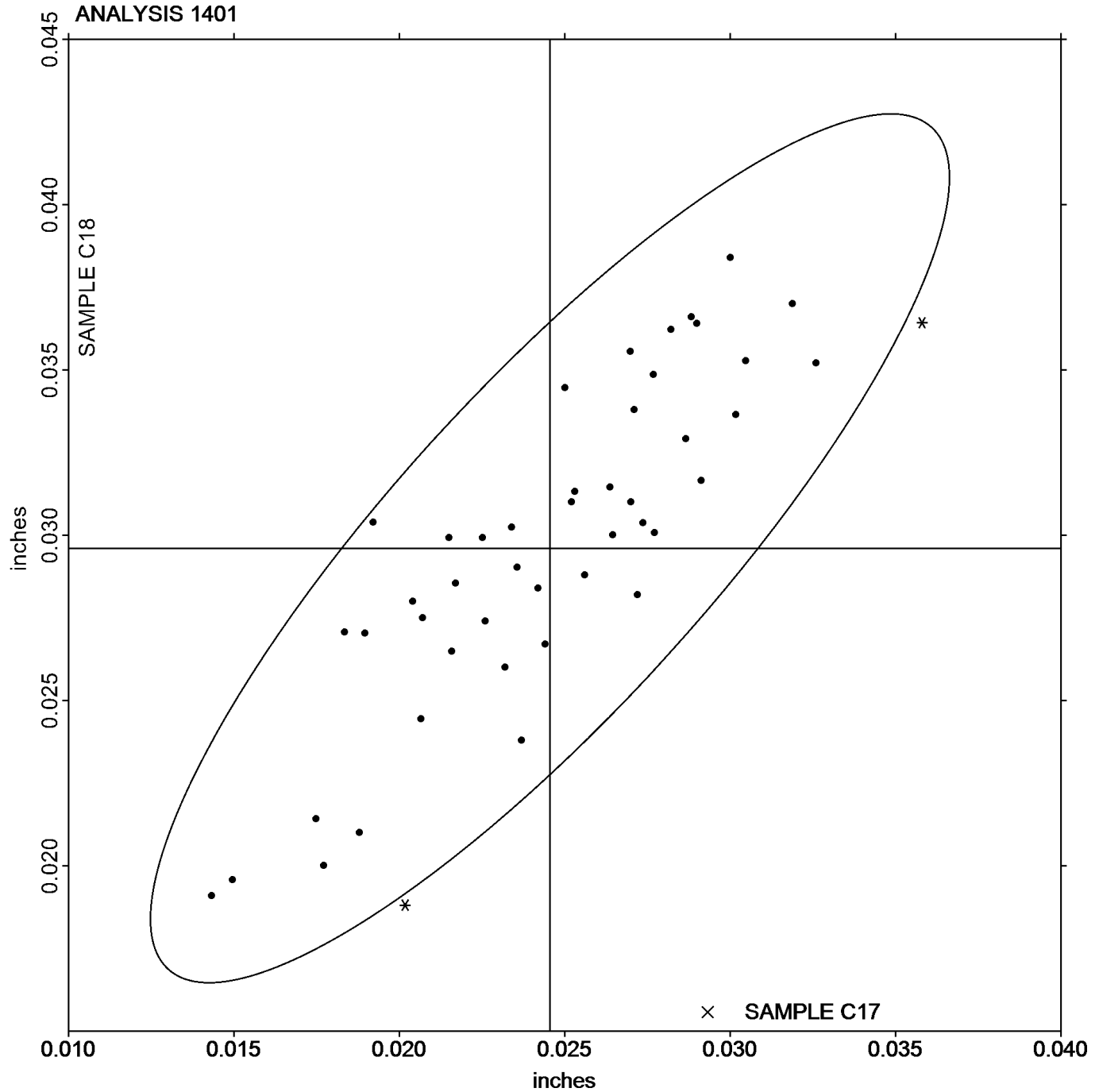
9UXA2E (X) - Data for sample C18 are low.

C6JMPZ (X) - Data for both samples are high. Possible Systematic Error.



SAMPLE C17
0.0246 inches

SAMPLE C18
0.0296 inches





Fasteners and Metals Interlaboratory Testing Program

Analysis 1402

Effective Case Depth
SAE J423, SAE J78

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample C17			Sample C18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4HHVTB		0.0204	-0.0023	-1.01	0.0274	-0.0015	-0.75
7CMQZJ	X	0.0221	-0.0005	-0.24	0.0209	-0.0079	-4.01
86ZCNX		0.0224	-0.0002	-0.10	0.0300	0.0011	0.57
9JC8JK		0.0243	0.0016	0.71	0.0318	0.0029	1.45
9UXA2E		0.0217	-0.0010	-0.45	0.0273	-0.0016	-0.81
A7Z7CT		0.0220	-0.0006	-0.27	0.0268	-0.0021	-1.06
ARMWLC		0.0245	0.0018	0.81	0.0295	0.0006	0.33
BEUPDM		0.0183	-0.0043	-1.92	0.0290	0.0001	0.05
C6JMPZ		0.0240	0.0014	0.60	0.0313	0.0025	1.24
CB6Z7E		0.0218	-0.0009	-0.38	0.0301	0.0012	0.61
CGVC6G		0.0233	0.0006	0.29	0.0275	-0.0014	-0.69
CJG2MA		0.0235	0.0008	0.36	0.0282	-0.0007	-0.35
ED4XH7		0.0234	0.0007	0.33	0.0282	-0.0007	-0.34
EFVV46	X	0.0156	-0.0070	-3.13	0.0142	-0.0147	-7.42
ENRQ4N		0.0218	-0.0009	-0.38	0.0296	0.0007	0.36
ENUACK		0.0234	0.0007	0.33	0.0306	0.0017	0.87
F9QCK7		0.0220	-0.0006	-0.28	0.0269	-0.0019	-0.98
H7WUFU3		0.0280	0.0053	2.35	0.0319	0.0030	1.54
HJ2LYA		0.0224	-0.0002	-0.10	0.0294	0.0006	0.29
HZQMZ8		0.0206	-0.0020	-0.90	0.0276	-0.0013	-0.67
J22X8B		0.0214	-0.0013	-0.56	0.0298	0.0009	0.46
JF2MA3		0.0258	0.0031	1.39	0.0317	0.0028	1.42
JHP769		0.0240	0.0013	0.59	0.0284	-0.0005	-0.24
JLLYY4		0.0230	0.0003	0.15	0.0303	0.0014	0.73
JQEWPF		0.0235	0.0009	0.38	0.0300	0.0011	0.57
K7BNW3		0.0244	0.0017	0.77	0.0250	-0.0039	-1.96
KDTWKY		0.0216	-0.0010	-0.46	0.0273	-0.0016	-0.81
KXC9Z3		0.0277	0.0051	2.25	0.0290	0.0001	0.05
L3LLFF		0.0244	0.0017	0.77	0.0280	-0.0009	-0.44
LR44NA		0.0200	-0.0027	-1.18	0.0310	0.0021	1.07
LYLCAK		0.0214	-0.0013	-0.58	0.0269	-0.0020	-0.99
MWAXFJ		0.0232	0.0005	0.24	0.0302	0.0013	0.67
MX7FHK		0.0214	-0.0013	-0.56	0.0240	-0.0049	-2.46
N47ATR		0.0209	-0.0017	-0.76	0.0290	0.0002	0.08
N63RVU		0.0182	-0.0045	-1.98	0.0265	-0.0023	-1.18
NUK9BX		0.0220	-0.0007	-0.30	0.0283	-0.0006	-0.31
NXPU9V	X	0.0280	0.0053	2.37	0.0364	0.0075	3.80
NYWWBU		0.0230	0.0003	0.15	0.0278	-0.0011	-0.55
PHJ88R		0.0240	0.0013	0.59	0.0280	-0.0009	-0.44
PVRMH4		0.0202	-0.0025	-1.09	0.0254	-0.0035	-1.76
QCWGWK		0.0232	0.0006	0.25	0.0326	0.0037	1.87
QKM3JU	X	0.0161	-0.0066	-2.92	0.0205	-0.0083	-4.21
QV98QU		0.0254	0.0027	1.22	0.0280	-0.0009	-0.44
R6RX2X		0.0224	-0.0003	-0.14	0.0304	0.0015	0.74
TC77RT	*	0.0168	-0.0059	-2.60	0.0296	0.0007	0.35
TTCFTR		0.0215	-0.0012	-0.52	0.0291	0.0002	0.09
TZRBKE		0.0218	-0.0009	-0.38	0.0244	-0.0045	-2.26



Fasteners and Metals Interlaboratory Testing Program

Analysis 1402

Effective Case Depth
SAE J423, SAE J78

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample C17			Sample C18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
UB8GW9		0.0264	0.0038	1.67	0.0321	0.0032	1.62
UWRA84		0.0234	0.0007	0.33	0.0294	0.0005	0.26
W3PVRP		0.0237	0.0010	0.46	0.0311	0.0022	1.12
X2BND8	X	0.0291	0.0065	2.88	0.0228	-0.0061	-3.09
XLXCKE	X	0.0299	0.0073	3.22	0.0221	-0.0068	-3.41
XYY9GL		0.0246	0.0019	0.85	0.0303	0.0014	0.72
YYGEKH		0.0186	-0.0041	-1.81	0.0274	-0.0015	-0.75
ZMGBHM		0.0217	-0.0010	-0.44	0.0302	0.0013	0.64
ZZRQLK		0.0257	0.0031	1.36	0.0298	0.0010	0.49

Summary Statistics

	Sample C17		Sample C18	
Grand Means	0.0227	inches	0.0289	inches
Stnd Dev Btwn Labs	0.0023	inches	0.0020	inches

Samples C17, C18 : Steel, Steel

Statistics based on 50 of 56 reporting participants

Comments on Assigned Data Flags for Test #1402

- 7CMQZJ (X) - Data for sample C18 are low.
- EFV46 (X) - Data for both samples are low.
- NXPU9V (X) - Data for sample C18 are high.
- QKM3JU (X) - Data for both samples are low.
- X2BND8 (X) - Data appear to be transposed between samples.
- XLXCKE (X) - Data appear to be transposed between samples.



Analysis 1402

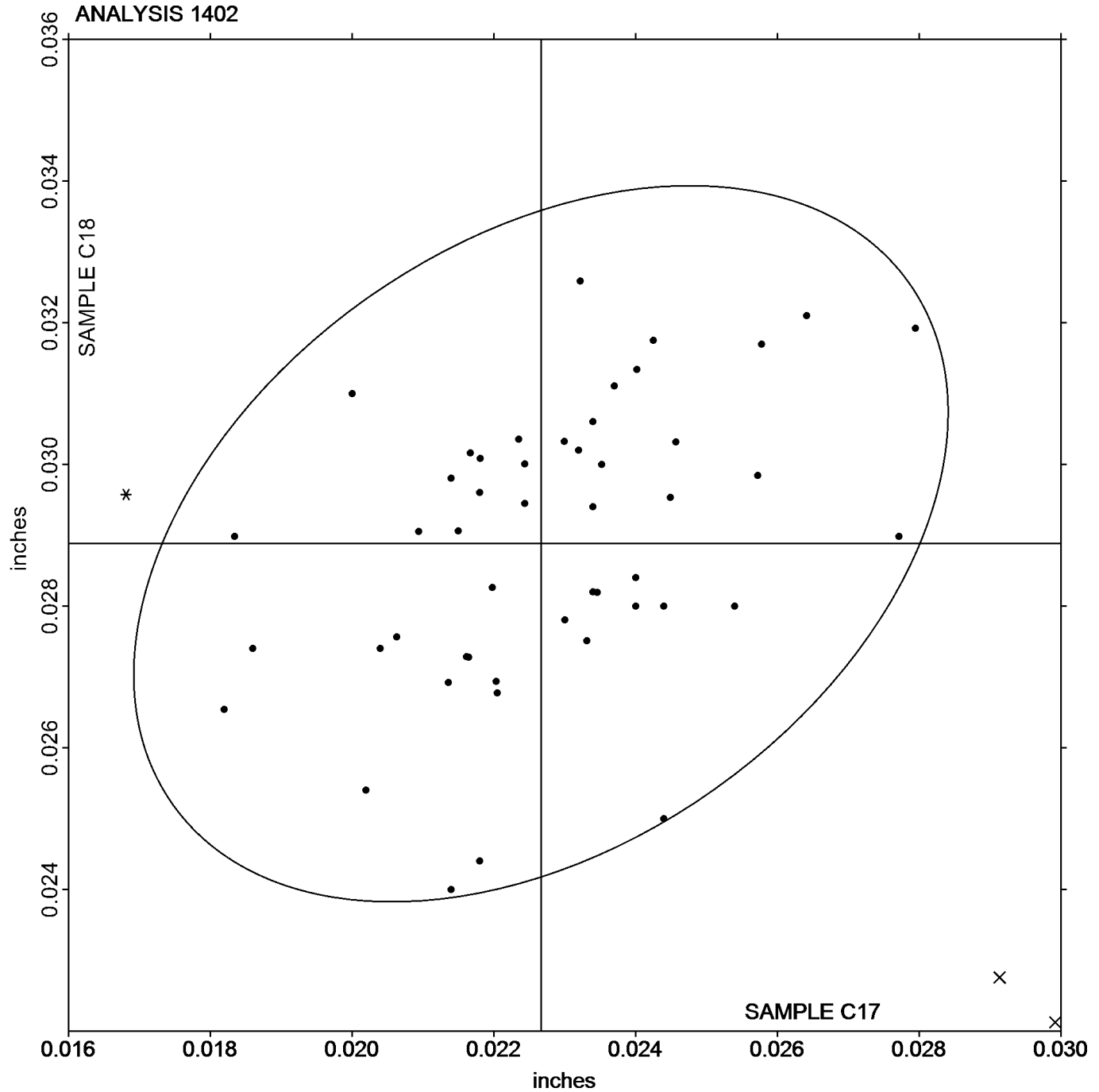
Effective Case Depth
SAE J423, SAE J78

SAMPLE C17

0.0227 inches

SAMPLE C18

0.0289 inches





Fasteners and Metals Interlaboratory Testing Program

Analysis 1411

Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample Y17			Sample Y18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3GPPQY		5.53	-0.12	-0.12	9.88	0.35	0.30	Abrams Three-Circle
3ZFXNU		4.34	-1.32	-1.31	8.33	-1.19	-1.00	General Intercept
43NERK		6.33	0.67	0.67	10.48	0.96	0.81	Heyn Linear Intercept
69LEGC		6.80	1.14	1.14	7.80	-1.72	-1.45	Comparison Method
6GYE2F		6.60	0.94	0.94	8.10	-1.42	-1.19	Comparison Method
8496RF		5.00	-0.66	-0.65	8.00	-1.52	-1.28	Comparison Method
8F2XTB		6.00	0.34	0.34	10.00	0.48	0.40	Comparison Method
8P37LG		5.60	-0.06	-0.06	9.80	0.28	0.23	Comparison Method
938RJD		4.48	-1.18	-1.17	9.08	-0.44	-0.37	Comparison Method
9R8C9E		5.54	-0.12	-0.12	10.40	0.88	0.74	Abrams Three-Circle
9UXA2E		7.30	1.64	1.63	9.50	-0.02	-0.02	Heyn Linear Intercept
BYMLXM	*	3.60	-2.06	-2.05	7.20	-2.32	-1.95	Comparison Method
C63QYM	*	5.20	-0.46	-0.46	6.40	-3.12	-2.62	Comparison Method
CVEQRP		5.46	-0.20	-0.20	10.85	1.33	1.12	Abrams Three-Circle
CVWYH6		5.30	-0.36	-0.36	9.10	-0.42	-0.36	Comparison Method
CYE473		6.88	1.22	1.22	10.88	1.35	1.14	Automatic Image Analysis
ECY62Y		5.50	-0.16	-0.16	9.50	-0.02	-0.02	Comparison Method
ENRQ4N		6.60	0.94	0.94	9.00	-0.52	-0.44	Comparison Method
EVA8J6		3.90	-1.76	-1.75	8.80	-0.72	-0.61	Comparison Method
EVMT6Y		5.00	-0.66	-0.65	10.00	0.48	0.40	Comparison Method
FA49L4		5.06	-0.60	-0.59	10.88	1.36	1.14	General Intercept
FEYTZL		5.22	-0.44	-0.44	10.53	1.01	0.85	Abrams Three-Circle
FN6KG3		6.80	1.14	1.14	8.80	-0.72	-0.61	Comparison Method
G8DYFA	X	8.20	2.54	2.53	4.20	-5.32	-4.47	Comparison Method
H9ZAH		6.60	0.94	0.94	11.80	2.28	1.91	Comparison Method
HZ8RA6		6.00	0.34	0.34	11.00	1.48	1.24	Comparison Method
HZQMZ8		6.00	0.34	0.34	8.00	-1.52	-1.28	Comparison Method
J22X8B		3.80	-1.86	-1.85	10.00	0.48	0.40	Comparison Method
J838E3		5.50	-0.16	-0.16	9.80	0.28	0.23	Comparison Method
K82WUK		5.60	-0.06	-0.06	9.30	-0.22	-0.19	Comparison Method
KCT4CT		5.40	-0.26	-0.26	10.14	0.62	0.52	General Intercept
KUCW63		5.00	-0.66	-0.65	7.80	-1.72	-1.45	Comparison Method
L3LLFF		6.20	0.54	0.54	9.10	-0.42	-0.36	Comparison Method
LJCKTA		5.80	0.14	0.14	10.50	0.98	0.82	Abrams Three-Circle
LWGRKY		5.00	-0.66	-0.65	10.30	0.78	0.65	Comparison Method
MEX97T		7.50	1.84	1.83	10.00	0.48	0.40	N/A
MREFVD		8.05	2.39	2.38	9.31	-0.21	-0.18	Automatic Image Analysis
N63RVU		5.70	0.04	0.04	10.00	0.48	0.40	Comparison Method
NFZT8X		5.90	0.24	0.24	8.70	-0.82	-0.69	Comparison Method
PHJ88R		5.66	0.00	0.00	11.38	1.85	1.55	Abrams Three-Circle
PVRMH4		4.70	-0.96	-0.95	9.80	0.28	0.23	Comparison Method
QKM3JU	*	8.00	2.34	2.33	7.30	-2.22	-1.87	Comparison Method
R3H8CU		5.20	-0.46	-0.46	9.30	-0.22	-0.19	Comparison Method
RR7KPN		6.34	0.68	0.68	9.78	0.26	0.22	Heyn Linear Intercept
T3YM3G		6.20	0.54	0.54	11.10	1.58	1.32	General Intercept
TKYDL6		5.73	0.07	0.07	9.60	0.07	0.06	Abrams Three-Circle
UB8GW9	M	4.70	-0.96	-0.95	No Data Reported			Comparison Method



Fasteners and Metals Interlaboratory Testing Program

Analysis 1411

Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample Y17			Sample Y18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
URCYTZ		5.78	0.12	0.12	10.56	1.04	0.87	Abrams Three-Circle
UWRA84		4.10	-1.56	-1.55	8.00	-1.52	-1.28	Comparison Method
XLXCKE		3.70	-1.96	-1.95	10.70	1.18	0.99	Comparison Method
Y48XDZ		5.40	-0.26	-0.26	8.00	-1.52	-1.28	Comparison Method
YCRRXC		6.19	0.53	0.53	10.67	1.14	0.96	Automatic Image Analysis
YN2FW2		5.44	-0.22	-0.22	10.44	0.92	0.77	Abrams Three-Circle

Summary Statistics

		Sample Y17		Sample Y18	
Grand Means		5.657	ASTM Grain Size	9.523	ASTM Grain Size
Std Dev Btwn Labs		1.005	ASTM Grain Size	1.192	ASTM Grain Size

Samples Y17, Y18 : AISI 304L, AISI 303

Statistics based on 51 of 53 reporting participants

Comments on Assigned Data Flags for Test #1411

G8DYFA (X) - Data appear to be transposed between samples.

UB8GW9 (M) - Participant did not submit data for sample Y18.



Analysis 1411

2nd Qtr
2026

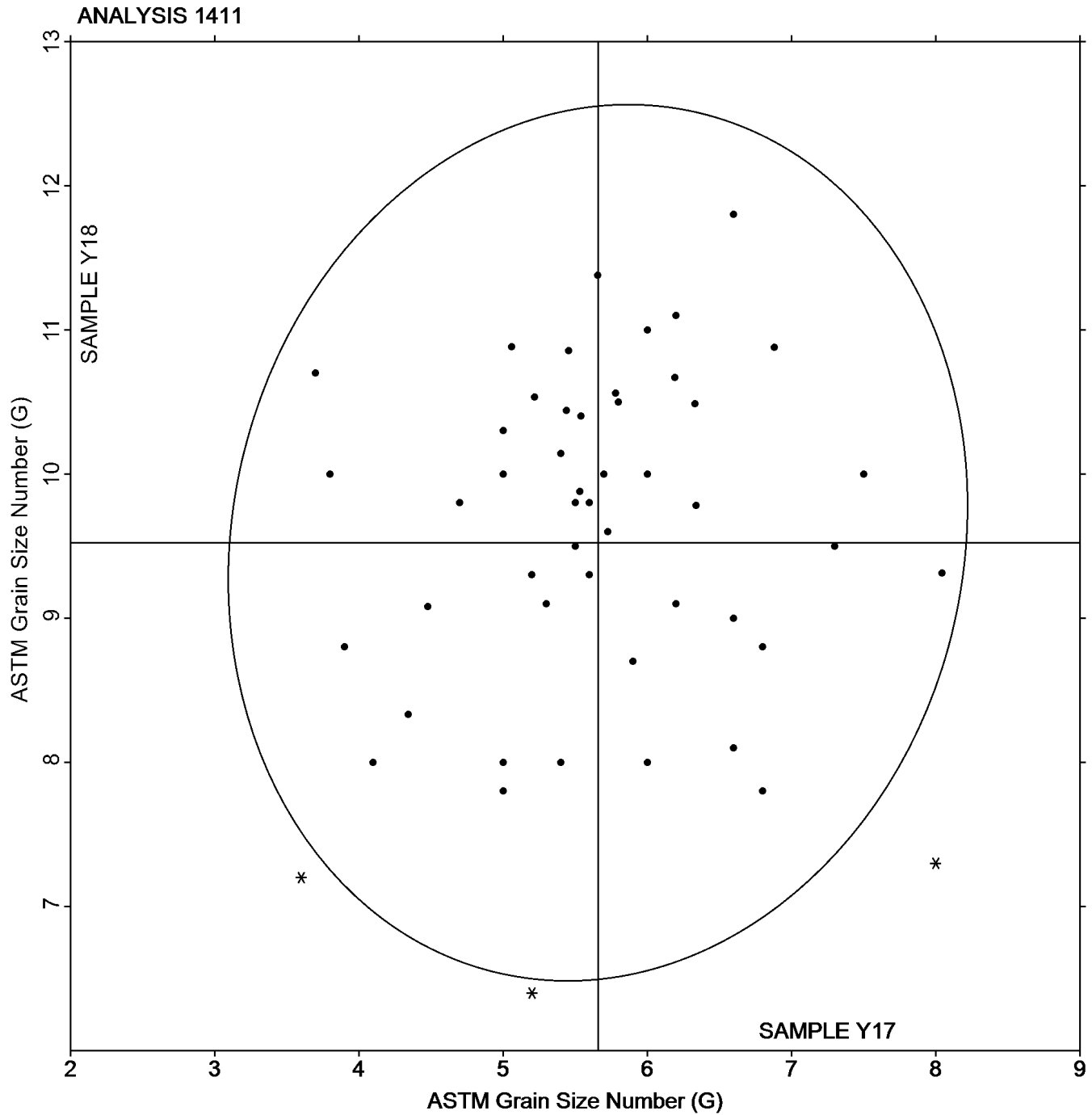
Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

SAMPLE Y17

SAMPLE Y18

5.657 ASTM Grain Size Number (G)

9.523 ASTM Grain Size Number (G)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1421

Alpha Case Depth
ASTM E3, E407

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample W17			Sample W18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2NT3H4		0.000245	0.000022	0.95	0.000251	0.000030	0.95
3L7X9X		0.000236	0.000013	0.57	0.000236	0.000015	0.48
3NN3YF		0.000231	0.000008	0.33	0.000232	0.000010	0.32
3QVBAL		0.000250	0.000027	1.16	0.000230	0.000009	0.27
4HVKU3		0.000254	0.000030	1.32	0.000245	0.000024	0.76
69LEGC		0.000260	0.000037	1.59	0.000300	0.000079	2.49
6GYE2F		0.000220	-0.000003	-0.15	0.000200	-0.000021	-0.67
7CMQZJ		0.000217	-0.000006	-0.26	0.000213	-0.000009	-0.27
8C48TQ	X	0.000060	-0.000164	-7.12	0.000058	-0.000163	-5.16
8GR6QT		0.000201	-0.000023	-0.98	0.000211	-0.000011	-0.33
9R8C9E		0.000221	-0.000003	-0.12	0.000225	0.000003	0.10
B6CYYB		0.000220	-0.000003	-0.13	0.000219	-0.000002	-0.06
CGVC6G		0.000243	0.000020	0.87	0.000232	0.000011	0.35
EVA8J6		0.000212	-0.000011	-0.50	0.000200	-0.000021	-0.67
FN6KG3	*	0.000220	-0.000003	-0.15	0.000300	0.000079	2.49
G8DYFA		0.000198	-0.000025	-1.11	0.000202	-0.000019	-0.61
H87FU6		0.000201	-0.000022	-0.98	0.000165	-0.000056	-1.77
H9ZAH		0.000217	-0.000006	-0.27	0.000233	0.000012	0.37
JHP769		0.000242	0.000019	0.81	0.000230	0.000009	0.27
KFGFF6		0.000199	-0.000025	-1.07	0.000214	-0.000007	-0.23
KLDG8H		0.000233	0.000010	0.42	0.000233	0.000011	0.36
L3LLFF		0.000212	-0.000011	-0.50	0.000234	0.000013	0.40
LR44NA		0.000230	0.000007	0.29	0.000229	0.000007	0.23
MREFVD		0.000185	-0.000038	-1.66	0.000197	-0.000024	-0.77
PPPUAT		0.000207	-0.000017	-0.73	0.000213	-0.000008	-0.26
PZ3ZZ2		0.000240	0.000017	0.72	0.000200	-0.000021	-0.67
QKM3JU	X	0.00208	0.001857	80.89	0.00304	0.002819	89.13
UWRA84	X	0.0409	0.040628	1,770.13	0.0471	0.046874	1,482.29
VFF8R3		0.000225	0.000002	0.08	0.000231	0.000009	0.30
W9YYX4	*	0.000178	-0.000045	-1.98	0.000138	-0.000083	-2.64
X7KY73	*	0.000280	0.000057	2.47	0.000220	-0.000001	-0.04
X7LX4G		0.000229	0.000005	0.22	0.000221	-0.000001	-0.02
YWCRUL		0.000195	-0.000028	-1.23	0.000186	-0.000035	-1.12

Summary Statistics

	Sample W17		Sample W18	
Grand Means	0.000223	inches	0.000221	inches
Std Dev Btwn Labs	0.000023	inches	0.000032	inches

Samples W17, W18 : Ti-6Al-4V, Ti-6Al-4V

Statistics based on 30 of 33 reporting participants

Comments on Assigned Data Flags for Test #1421

8C48TQ (X) - Data for both samples are low.

QKM3JU (X) - Data for both samples are high.

UWRA84 (X) - Extreme data.



Analysis 1421

2nd Qtr

Alpha Case Depth

2026

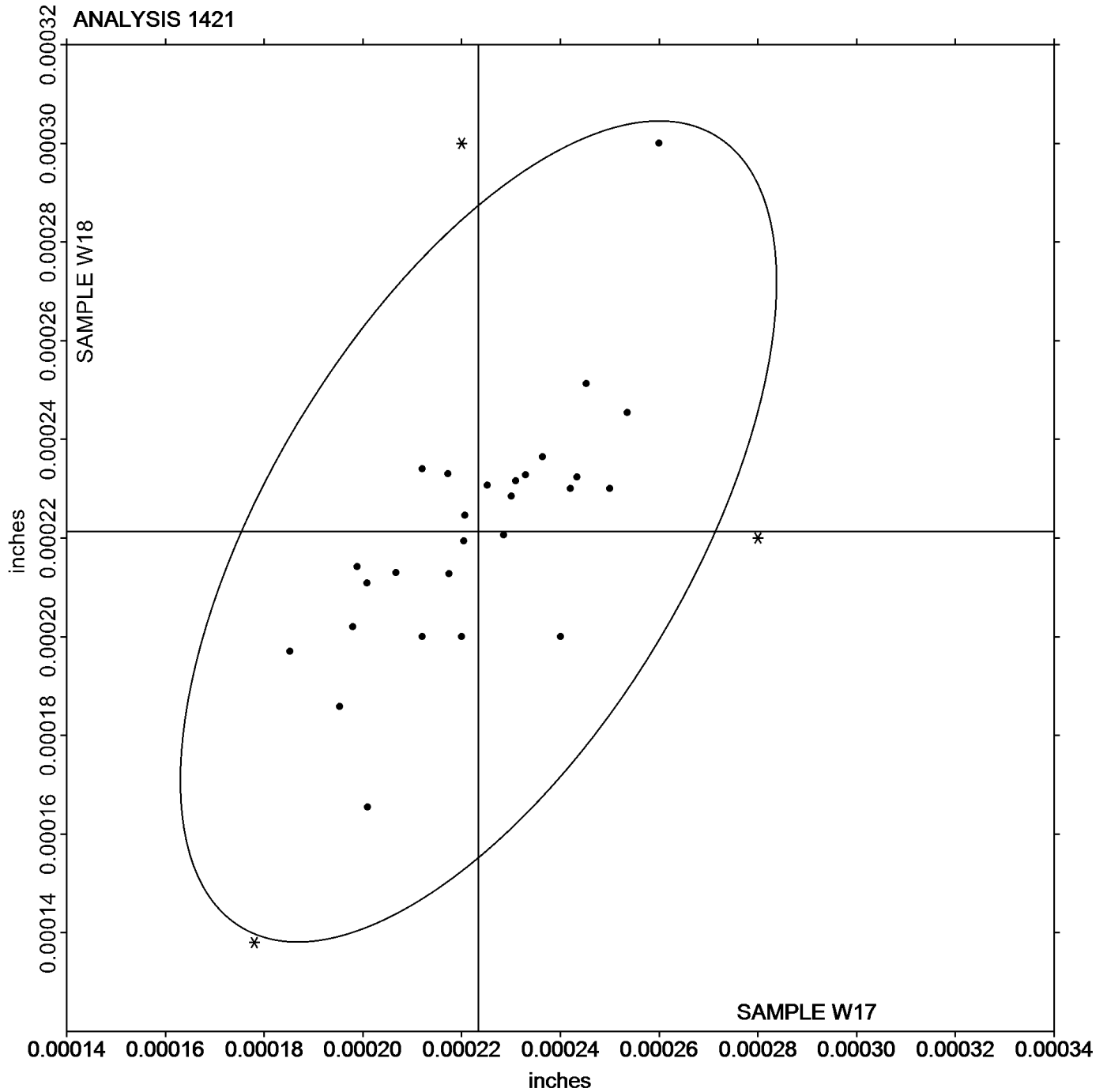
ASTM E3, E407

SAMPLE W17

SAMPLE W18

0.00022 inches

0.00022 inches





Fasteners and Metals Interlaboratory Testing Program

Analysis 1422

Alloy Depletion: Inconel
ASTM E3, E407

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample K17			Sample K18		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3QRXFX		0.3488	0.0681	0.98	0.3140	0.0559	0.87
6GYE2F		0.2800	-0.0007	-0.01	0.2800	0.0219	0.34
9H47GL		0.2800	-0.0007	-0.01	0.2500	-0.0081	-0.13
A6PE9H		0.3202	0.0396	0.57	0.2802	0.0221	0.35
G8DYFA		0.2120	-0.0687	-0.98	0.2280	-0.0301	-0.47
H9ZAHL		0.2764	-0.0043	-0.06	0.3038	0.0457	0.71
MBF4GA		0.2260	-0.0547	-0.78	0.2260	-0.0321	-0.50
V9FVP4		0.4027	0.1220	1.75	0.3247	0.0666	1.04
W9YYX4		0.1800	-0.1007	-1.44	0.1160	-0.1421	-2.22
YPC82C	X	0.9800	0.6993	10.02	2.560	2.3019	35.95

Summary Statistics

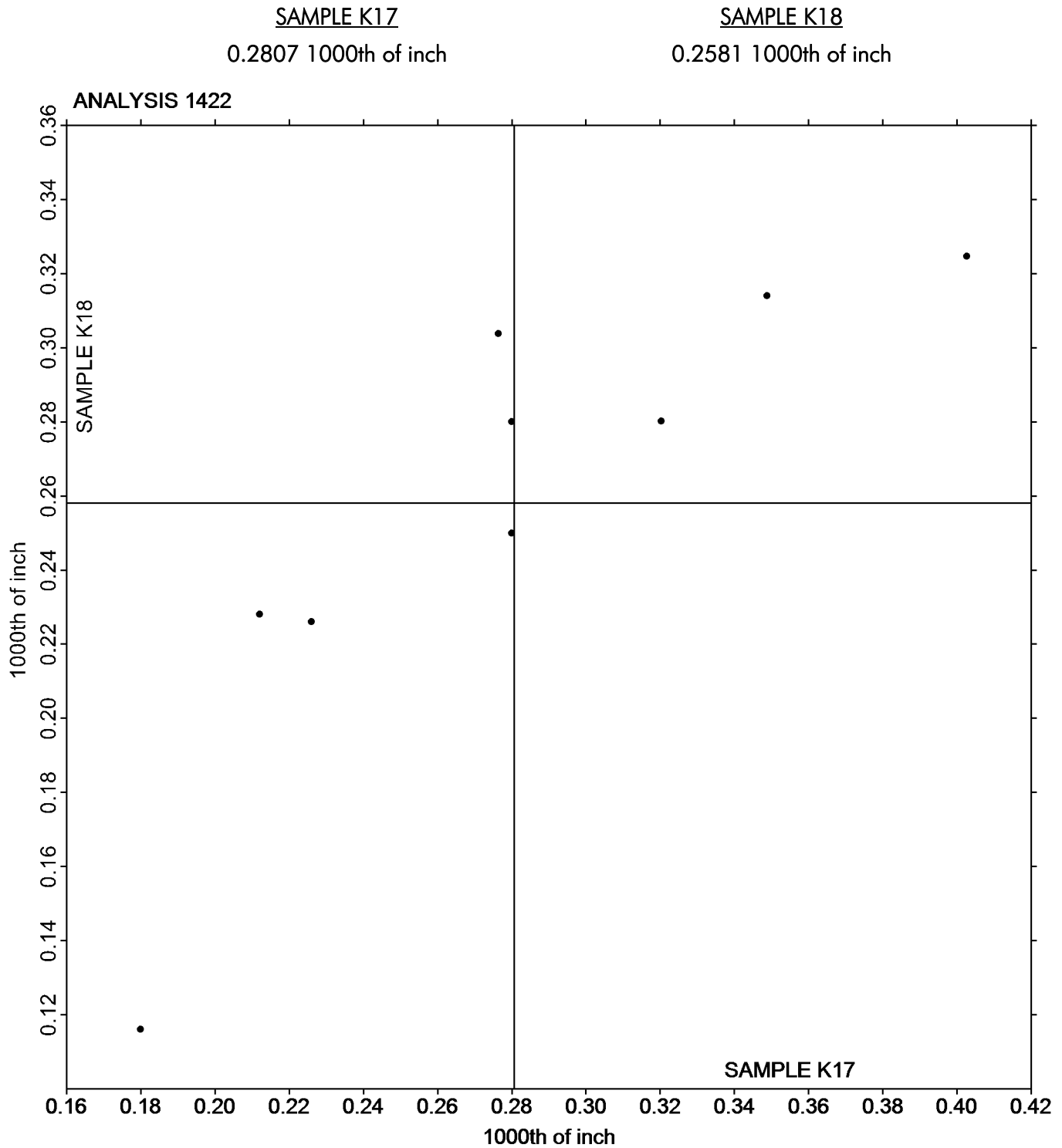
	Sample K17		Sample K18	
Grand Means	0.2807	1000th of inch	0.2581	1000th of inch
Std Dev Btwn Labs	0.0698	1000th of inch	0.0640	1000th of inch

Samples K17, K18 : Inco 718, Inco 718

Statistics based on 9 of 10 reporting participants

Comments on Assigned Data Flags for Test #1422

YPC82C (X) - Data for both samples are high.





Fasteners and Metals Interlaboratory Testing Program

Analysis 1500

Nickel-based Alloy, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		19.79	0.06	0.26	18.34	0.03	0.15	WD
3QRXFX		19.64	-0.09	-0.42	18.25	-0.06	-0.38	WD
3QVBAL		19.74	0.01	0.03	18.50	0.19	1.09	OE
3WGMRU		20.11	0.38	1.75	18.50	0.19	1.12	IC
4HGVUW		19.51	-0.22	-1.02	18.23	-0.08	-0.50	IC
6NHUG7		19.52	-0.21	-0.97	18.23	-0.08	-0.48	OE
6NL8CF		19.72	-0.01	-0.06	18.27	-0.04	-0.24	OE
77WC6W		19.76	0.03	0.15	18.32	0.00	0.03	OE
8GR6QT		19.62	-0.11	-0.50	18.03	-0.28	-1.63	IC
9Z7QGV		19.91	0.18	0.85	18.52	0.21	1.22	ED
A6PE9H		19.75	0.02	0.11	18.34	0.03	0.19	WD
A8H2AL	X	17.77	-1.96	-9.08	18.23	-0.08	-0.48	IC
B6CYYB		20.29	0.56	2.61	18.69	0.38	2.20	IC
DDATN8	X	21.79	2.06	9.57	20.28	1.97	11.53	ED
EFAFR9		19.92	0.19	0.87	18.47	0.16	0.91	OE
F9QCK7		19.78	0.05	0.25	18.39	0.08	0.44	OE
FA49L4		19.61	-0.12	-0.55	18.19	-0.12	-0.71	WD
FEYTZL		19.37	-0.36	-1.67	18.21	-0.10	-0.61	OE
FGZ2X4		20.07	0.34	1.57	18.59	0.28	1.64	GD
G7HGE8		19.55	-0.18	-0.82	18.16	-0.15	-0.89	WD
J22X8B		19.98	0.25	1.14	18.36	0.05	0.30	OE
JJEKKX	X	18.67	-1.06	-4.93	17.35	-0.96	-5.65	OE
KE28BB		19.55	-0.18	-0.84	18.16	-0.15	-0.89	OE
LBWZ9A		19.64	-0.09	-0.42	18.21	-0.10	-0.59	OE
LWGRKY		19.75	0.02	0.08	18.20	-0.11	-0.67	OE
MBF4GA		19.60	-0.13	-0.59	18.32	0.01	0.07	IC
MP8XWG		19.93	0.20	0.93	18.48	0.16	0.96	IC
MREFVD	X	18.98	-0.75	-3.48	17.60	-0.71	-4.18	OE
N47ATR		19.57	-0.16	-0.74	18.27	-0.04	-0.24	OE
P2EQ97		20.01	0.28	1.30	18.46	0.15	0.87	OE
PMD4X4		19.50	-0.23	-1.05	18.10	-0.21	-1.24	OE
PVRMH4		19.80	0.07	0.31	18.49	0.18	1.07	OE
Q4L982		19.62	-0.11	-0.53	18.31	0.00	0.01	XX
QGZPJC		19.99	0.26	1.21	18.56	0.25	1.44	WD
QXB49M		19.57	-0.16	-0.74	18.07	-0.24	-1.40	OE
QXJWB6		19.69	-0.04	-0.17	18.32	0.01	0.06	WD
RKG9DU		19.28	-0.45	-2.07	17.99	-0.32	-1.86	OE
UHBC23		19.79	0.06	0.28	18.35	0.04	0.25	WD
X2BND8		19.62	-0.11	-0.53	18.02	-0.29	-1.69	OE

Summary Statistics

Grand Means	Sample J17		Sample J18	
	19.73	Percent	18.31	Percent
Std Dev Btwn Labs	0.22	Percent	0.17	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 35 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1500

Nickel-based Alloy, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1500

A8H2AL (X) - Data for sample J17 are low.

DDATN8 (X) - Data for both samples are high.

JJEKKX (X) - Data for both samples are low.

MREFVD (X) - Data for both samples are low.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1500

Nickel-based Alloy, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 154

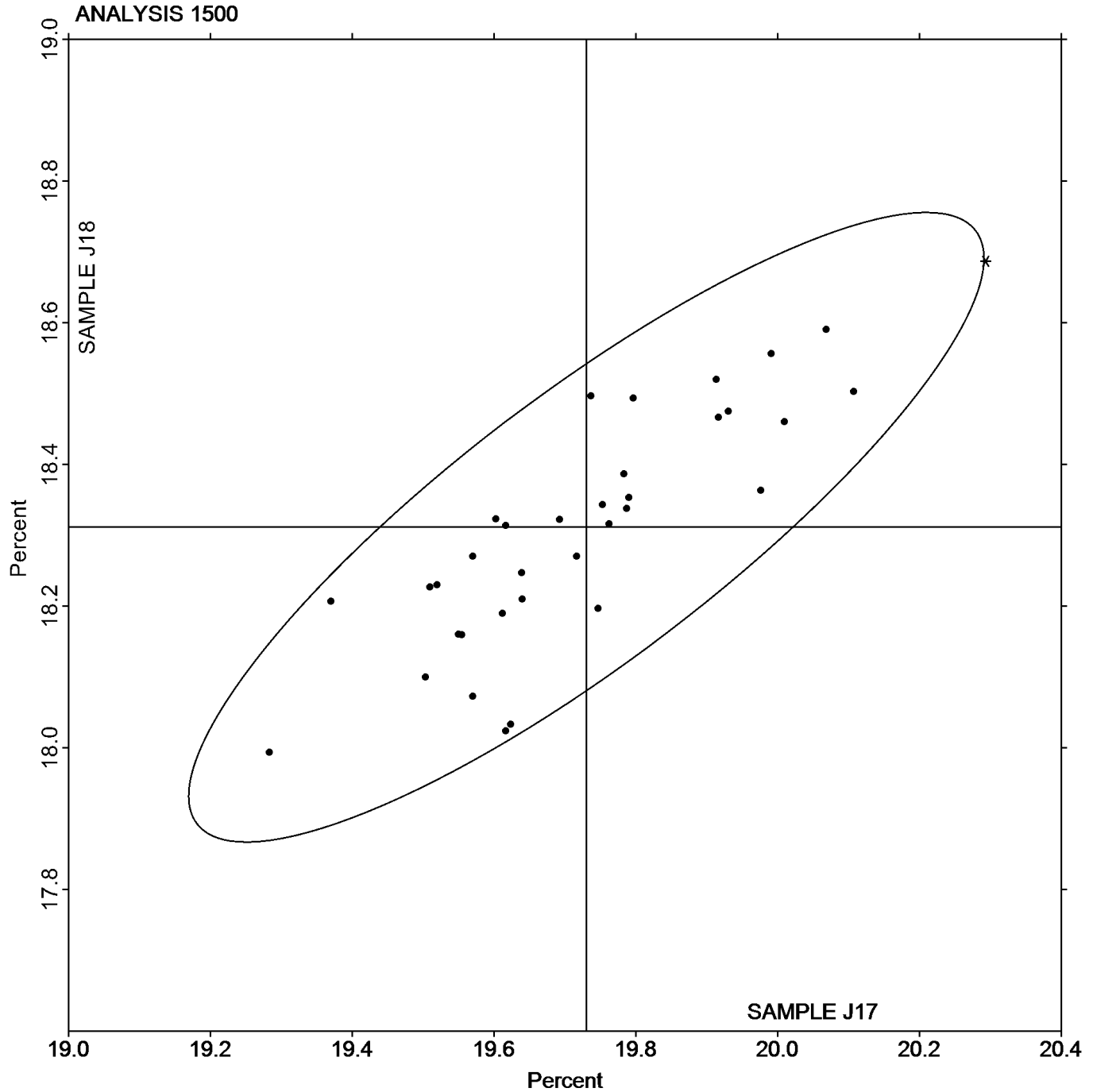
2nd Qtr
2026

SAMPLE J17

19.73 Percent

SAMPLE J18

18.31 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1501

Nickel-based Alloy, MANGANESE (Mn)
MANGANESE (Mn)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		0.1695	0.0031	0.35	0.0768	-0.0002	-0.04	WD
3QRXFX		0.1643	-0.0020	-0.23	0.0739	-0.0031	-0.56	WD
3QVBAL		0.1563	-0.0100	-1.12	0.0770	0.0000	0.00	OE
3WGMRU		0.1763	0.0100	1.12	0.0801	0.0031	0.56	IC
4HGVUW		0.1703	0.0040	0.45	0.0773	0.0003	0.06	IC
6NHUG7	*	0.1743	0.0080	0.90	0.0923	0.0153	2.78	OE
6NL8CF		0.1580	-0.0083	-0.94	0.0768	-0.0002	-0.03	OE
77WC6W		0.1607	-0.0057	-0.64	0.0762	-0.0008	-0.14	OE
8GR6QT		0.1717	0.0053	0.60	0.0787	0.0017	0.30	IC
9Z7QGV	X	0.2167	0.0503	5.66	0.1533	0.0763	13.85	ED
A6PE9H		0.1693	0.0030	0.34	0.0775	0.0005	0.09	WD
B6CYYB		0.1733	0.0070	0.79	0.0833	0.0063	1.15	IC
DDATN8	X	0.1133	-0.0530	-5.96	0.0314	-0.0456	-8.27	ED
EFAFR9		0.1533	-0.0130	-1.46	0.0673	-0.0097	-1.75	OE
F9QCK7		0.1633	-0.0030	-0.34	0.0770	0.0000	0.00	OE
FA49L4		0.1737	0.0073	0.82	0.0827	0.0057	1.03	WD
FEYTZL		0.1465	-0.0198	-2.23	0.0626	-0.0144	-2.61	OE
FGZ2X4		0.1757	0.0093	1.05	0.0820	0.0050	0.91	GD
G7HGE8		0.1726	0.0063	0.71	0.0781	0.0011	0.19	WD
J22X8B		0.1620	-0.0043	-0.49	0.0783	0.0013	0.24	OE
JJEKKX	X	0.1870	0.0207	2.32	0.1033	0.0263	4.78	OE
KE28BB		0.1770	0.0107	1.20	0.0800	0.0030	0.55	OE
LBWZ9A		0.1590	-0.0073	-0.82	0.0780	0.0010	0.18	OE
LWGRKY		0.1650	-0.0013	-0.15	0.0773	0.0003	0.06	OE
MBF4GA		0.1636	-0.0027	-0.31	0.0732	-0.0038	-0.68	IC
MP8XWG		0.1727	0.0063	0.71	0.0787	0.0017	0.30	IC
MREFVD	X	0.0963	-0.0700	-7.87	0.0730	-0.0040	-0.73	OE
N47ATR		0.1590	-0.0073	-0.82	0.0712	-0.0058	-1.05	OE
P2EQ97		0.1660	-0.0003	-0.04	0.0757	-0.0013	-0.24	OE
PMD4X4		0.1723	0.0060	0.67	0.0775	0.0005	0.10	OE
PVRMH4		0.1603	-0.0060	-0.67	0.0777	0.0007	0.12	OE
Q4L982		0.1533	-0.0130	-1.46	0.0683	-0.0087	-1.57	XX
QGZPJC		0.1748	0.0085	0.96	0.0830	0.0060	1.08	WD
QXB49M		0.1760	0.0097	1.09	0.0711	-0.0059	-1.07	OE
QXJWB6		0.1660	-0.0004	-0.04	0.0750	-0.0020	-0.36	WD
RKG9DU		0.1860	0.0197	2.21	0.0868	0.0098	1.77	OE
UHBC23		0.1637	-0.0027	-0.30	0.0750	-0.0020	-0.36	WD
X2BND8		0.1493	-0.0170	-1.91	0.0713	-0.0057	-1.03	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	0.1663	Percent	0.0770	Percent
Stnd Dev Btwn Labs	0.0089	Percent	0.0055	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 34 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1501

Nickel-based Alloy, MANGANESE (Mn)
MANGANESE (Mn)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1501

9Z7QGV (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

DDATN8 (X) - Data for both samples are low. Inconsistent within the determinations of sample J17.

JJEKKX (X) - Data for sample J18 are high.

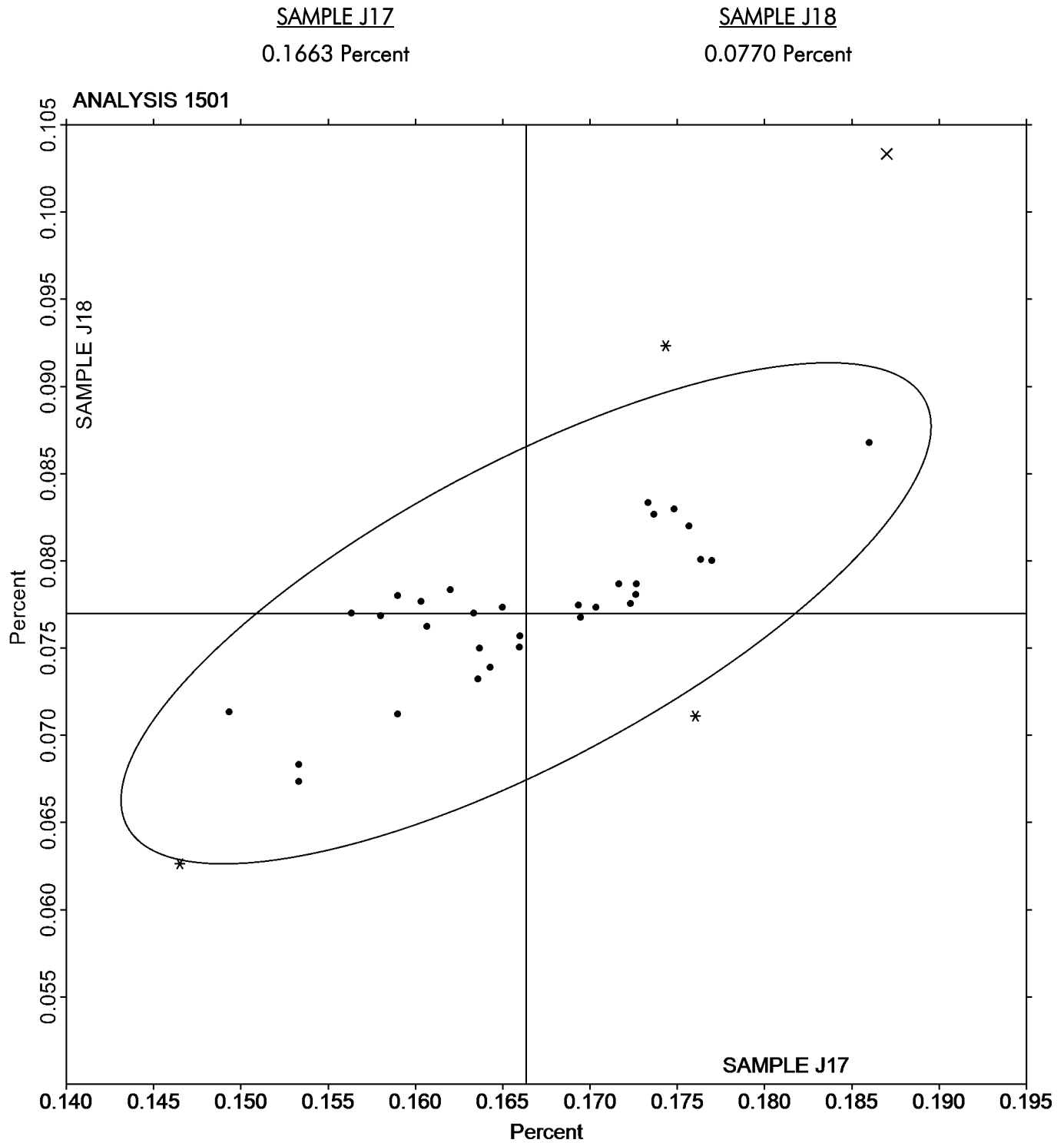
MREFVD (X) - Data for sample J17 are low.



Analysis 1501

Nickel-based Alloy, MANGANESE (Mn)

MANGANESE (Mn)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1502

Nickel-based Alloy, IRON (Fe)
IRON (Fe)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		16.54	-0.21	-0.87	18.73	-0.04	-0.15	WD
3QRXFX		16.52	-0.23	-0.95	18.62	-0.15	-0.55	WD
3QVBAL		16.72	-0.03	-0.14	18.62	-0.16	-0.56	OE
3WGMRU		16.91	0.15	0.62	18.90	0.12	0.44	IC
4HGVUW		16.58	-0.18	-0.72	18.54	-0.24	-0.85	IC
6NHUG7		16.68	-0.07	-0.30	18.61	-0.17	-0.61	OE
6NL8CF		16.68	-0.07	-0.30	18.53	-0.25	-0.89	OE
77WC6W		16.62	-0.13	-0.54	18.69	-0.09	-0.32	OE
8GR6QT		16.41	-0.35	-1.42	18.29	-0.49	-1.76	IC
9Z7QGV		17.10	0.34	1.39	19.11	0.33	1.21	ED
A6PE9H		16.73	-0.03	-0.11	18.77	-0.01	-0.03	WD
B6CYYB		17.16	0.41	1.65	19.36	0.59	2.13	IC
DDATN8	*	17.29	0.54	2.18	19.57	0.79	2.87	ED
EFAFR9		17.08	0.32	1.30	19.00	0.22	0.81	OE
F9QCK7		16.72	-0.04	-0.15	18.61	-0.17	-0.60	OE
FA49L4		16.88	0.12	0.48	18.94	0.16	0.59	WD
FEYTZL		16.90	0.15	0.60	19.05	0.27	0.99	OE
FGZ2X4		16.37	-0.38	-1.55	18.36	-0.42	-1.51	GD
G7HGE8		16.50	-0.26	-1.04	18.67	-0.10	-0.38	WD
J22X8B		16.62	-0.13	-0.54	18.74	-0.04	-0.14	OE
JJEKKX		17.41	0.65	2.65	19.26	0.49	1.76	OE
KE28BB		16.75	-0.01	-0.03	18.80	0.02	0.09	OE
LBWZ9A		16.79	0.03	0.14	18.64	-0.14	-0.49	OE
LWGRKY		16.60	-0.15	-0.62	18.68	-0.10	-0.35	OE
MBF4GA		16.72	-0.03	-0.14	19.04	0.26	0.95	IC
MP8XWG		16.63	-0.13	-0.53	18.62	-0.15	-0.55	IC
MREFVD		16.81	0.05	0.22	18.85	0.07	0.27	OE
N47ATR	X	15.37	-1.39	-5.63	17.19	-1.59	-5.74	OE
P2EQ97		16.38	-0.38	-1.53	18.31	-0.47	-1.69	OE
PMD4X4		16.81	0.05	0.20	18.72	-0.06	-0.20	OE
PVRMH4		16.89	0.13	0.54	18.95	0.17	0.63	OE
Q4L982		16.51	-0.24	-0.99	18.79	0.02	0.06	XX
QGZPJC		16.95	0.19	0.77	19.04	0.27	0.96	WD
QXB49M		17.03	0.27	1.10	18.83	0.05	0.20	OE
QXJWB6		16.60	-0.16	-0.63	18.75	-0.02	-0.09	WD
RKG9DU		16.49	-0.27	-1.10	18.51	-0.27	-0.97	OE
UHBC23		16.67	-0.08	-0.34	18.71	-0.07	-0.25	BD
X2BND8		16.92	0.16	0.66	18.50	-0.28	-1.00	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	16.76	Percent	18.78	Percent
Stnd Dev Btwn Labs	0.25	Percent	0.28	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 37 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1502

Nickel-based Alloy, IRON (Fe)
IRON (Fe)

Cycle 154

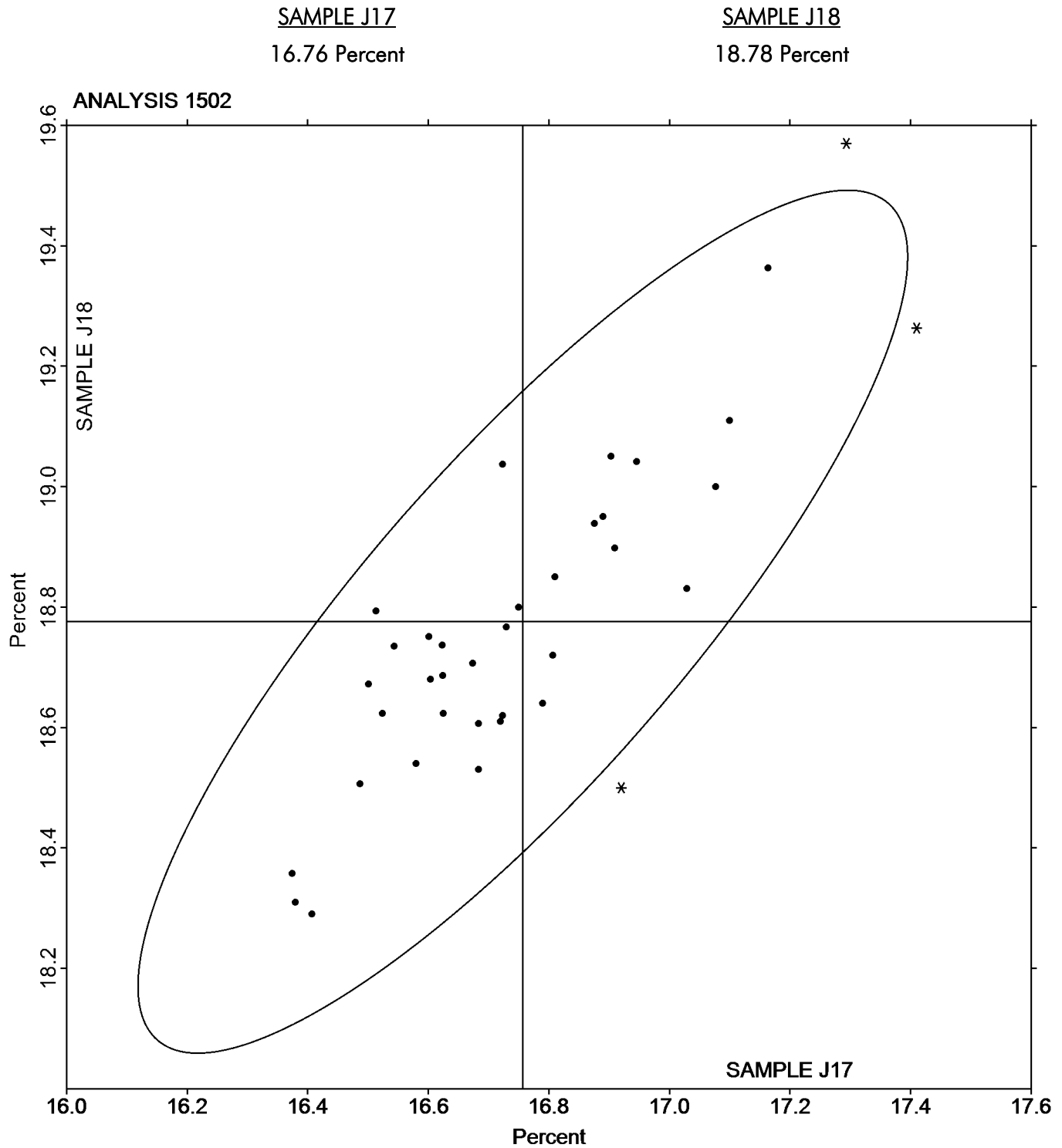
2nd Qtr
2026

Key to Method Codes Reported by Participants

BD	By Difference	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1502

N47ATR (X) - Data for both samples are low. Possible Systematic Error.





Fasteners and Metals Interlaboratory Testing Program

Analysis 1503

Nickel-based Alloy, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		3.194	0.014	0.32	2.857	-0.013	-0.35	WD
3QRXFX		3.140	-0.041	-0.98	2.836	-0.034	-0.92	WD
3QVBAL		3.192	0.011	0.26	2.872	0.002	0.05	OE
3WGMRU		3.289	0.109	2.61	2.944	0.074	2.01	IC
4HGVUW		3.141	-0.040	-0.96	2.829	-0.040	-1.09	IC
6NHUG7		3.197	0.016	0.38	2.893	0.024	0.64	OE
6NL8CF		3.193	0.013	0.30	2.873	0.004	0.10	OE
77WC6W		3.187	0.006	0.16	2.868	-0.001	-0.04	OE
8GR6QT		3.148	-0.033	-0.79	2.836	-0.034	-0.91	IC
9Z7QGV		3.127	-0.054	-1.30	2.823	-0.046	-1.25	ED
A6PE9H		3.202	0.021	0.50	2.890	0.020	0.54	WD
A8H2AL	X	2.850	-0.331	-7.94	2.867	-0.003	-0.08	IC
B6CYYB	X	3.395	0.214	5.13	3.108	0.239	6.45	IC
DDATN8	X	2.317	-0.863	-20.73	2.188	-0.682	-18.42	ED
EFAFR9		3.173	-0.007	-0.18	2.857	-0.013	-0.35	OE
F9QCK7		3.177	-0.004	-0.10	2.890	0.020	0.55	OE
FA49L4		3.118	-0.062	-1.50	2.814	-0.056	-1.50	WD
FEYTZL		3.150	-0.031	-0.74	2.834	-0.036	-0.97	OE
FGZ2X4	X	2.993	-0.188	-4.52	2.670	-0.200	-5.39	GD
G7HGE8		3.180	0.000	-0.01	2.868	-0.002	-0.05	WD
J22X8B		3.187	0.006	0.14	2.810	-0.060	-1.61	OE
JJEKKX		3.223	0.043	1.02	2.920	0.050	1.36	OE
KE28BB		3.217	0.036	0.87	2.897	0.027	0.74	OE
LBWZ9A		3.170	-0.011	-0.26	2.870	0.000	0.01	OE
LWGRKY		3.211	0.030	0.73	2.858	-0.012	-0.32	OE
MBF4GA		3.169	-0.011	-0.28	2.886	0.016	0.43	IC
MP8XWG		3.166	-0.014	-0.35	2.862	-0.008	-0.22	IC
MREFVD		3.263	0.083	1.98	2.947	0.077	2.08	OE
N47ATR		3.278	0.097	2.33	2.966	0.096	2.60	OE
P2EQ97		3.140	-0.041	-0.98	2.840	-0.030	-0.80	OE
PMD4X4		3.127	-0.054	-1.30	2.860	-0.010	-0.26	OE
PVRMH4		3.141	-0.040	-0.96	2.890	0.020	0.54	XX
QGZPJC		3.171	-0.010	-0.25	2.859	-0.011	-0.30	WD
QXB49M		3.158	-0.023	-0.55	2.884	0.014	0.38	OE
QXJWB6		3.150	-0.031	-0.74	2.830	-0.040	-1.07	WD
RKG9DU	X	3.130	-0.051	-1.22	2.140	-0.730	-19.72	OE
UHBC23		3.166	-0.014	-0.35	2.856	-0.013	-0.36	WD
X2BND8		3.220	0.040	0.95	2.882	0.013	0.34	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	3.181	Percent	2.870	Percent
Stnd Dev Btwn Labs	0.042	Percent	0.037	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 33 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1503

Nickel-based Alloy, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1503

A8H2AL (X) - Data for sample J17 are low.

B6CYYB (X) - Data for both samples are high. Possible Systematic Error.

DDATN8 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

FGZ2X4 (X) - Data for both samples are low. Possible Systematic Error.

RKG9DU (X) - Data for sample J18 are low.



Analysis 1503

Nickel-based Alloy, MOLYBDENUM (Mo)

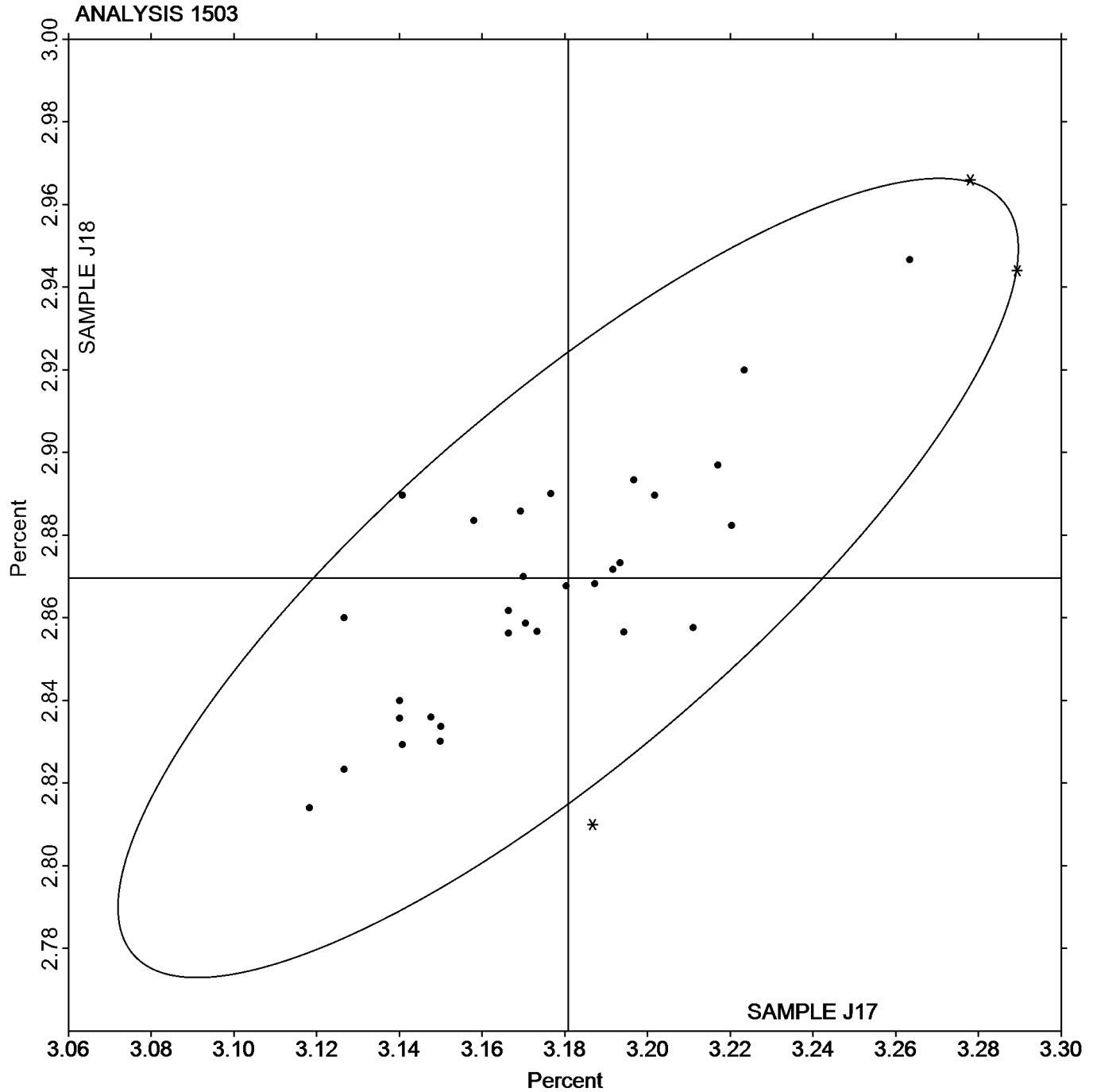
MOLYBDENUM (Mo)

SAMPLE J17

SAMPLE J18

3.181 Percent

2.870 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1504

Nickel-based Alloy, ALUMINUM (AI)
ALUMINUM (AI)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		0.4745	-0.0313	-2.55	0.4601	-0.0363	-2.35	WD
3QRXFX		0.4999	-0.0059	-0.48	0.4868	-0.0096	-0.62	WD
3QVBAL		0.5080	0.0022	0.18	0.5000	0.0036	0.24	OE
3WGMRU	X	0.5573	0.0515	4.20	0.5240	0.0276	1.79	AA
4HGVUW		0.5097	0.0038	0.31	0.5057	0.0093	0.60	IC
6NHUG7		0.4847	-0.0212	-1.72	0.4747	-0.0217	-1.40	OE
6NL8CF		0.5107	0.0048	0.39	0.5040	0.0076	0.50	OE
77WC6W	*	0.5373	0.0315	2.56	0.4907	-0.0056	-0.36	OE
8GR6QT		0.5087	0.0028	0.23	0.4917	-0.0047	-0.30	IC
9Z7QGV	*	0.5333	0.0275	2.24	0.5400	0.0436	2.83	ED
A6PE9H		0.5009	-0.0050	-0.40	0.5058	0.0095	0.61	OE
A8H2AL	X	0.4017	-0.1042	-8.48	0.4320	-0.0644	-4.17	IC
B6CYYB	X	0.4190	-0.0868	-7.07	0.5103	0.0140	0.91	IC
DDATN8	X	0.3860	-0.1198	-9.76	0.3893	-0.1070	-6.93	ED
EFAFR9		0.5100	0.0042	0.34	0.4967	0.0003	0.02	OE
F9QCK7		0.5100	0.0042	0.34	0.5100	0.0136	0.88	OE
FEYTZL		0.4843	-0.0215	-1.75	0.4673	-0.0291	-1.88	OE
FGZ2X4		0.4937	-0.0122	-0.99	0.4823	-0.0140	-0.91	XX
G7HGE8		0.4934	-0.0125	-1.02	0.4767	-0.0196	-1.27	OE
J22X8B		0.5177	0.0118	0.96	0.4940	-0.0024	-0.15	OE
JJEKKX		0.5003	-0.0055	-0.45	0.4870	-0.0094	-0.61	OE
KE28BB		0.5100	0.0042	0.34	0.5020	0.0056	0.37	OE
LBWZ9A		0.5120	0.0062	0.50	0.5100	0.0136	0.88	OE
LWGRKY		0.5093	0.0035	0.29	0.4987	0.0023	0.15	OE
MBF4GA		0.5125	0.0067	0.55	0.5091	0.0127	0.83	IC
MP8XWG		0.5107	0.0048	0.39	0.5077	0.0113	0.73	IC
MREFVD		0.5200	0.0142	1.15	0.5100	0.0136	0.88	OE
N47ATR	X	0.5630	0.0572	4.66	0.5410	0.0446	2.89	OE
P2EQ97		0.5160	0.0102	0.83	0.5080	0.0116	0.75	OE
PMD4X4		0.5043	-0.0015	-0.12	0.4970	0.0006	0.04	OE
PVRMH4		0.5187	0.0128	1.05	0.5053	0.0090	0.58	XX
Q4L982		0.5123	0.0065	0.53	0.4853	-0.0110	-0.71	XX
QGZPJC	X	0.3789	-0.1269	-10.34	0.3622	-0.1342	-8.69	WD
QXB49M		0.5161	0.0103	0.84	0.5019	0.0056	0.36	OE
QXJWB6		0.4888	-0.0171	-1.39	0.4813	-0.0151	-0.98	WD
RKG9DU		0.4953	-0.0105	-0.85	0.4953	-0.0010	-0.07	OE
UHBC23		0.5143	0.0085	0.69	0.5033	0.0070	0.45	WD
X2BND8		0.5007	-0.0052	-0.42	0.4893	-0.0070	-0.45	OE

Summary Statistics

		Sample J17		Sample J18	
Grand Means		0.5058	Percent	0.4964	Percent
Std Dev Btwn Labs		0.0123	Percent	0.0154	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 31 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1504

Nickel-based Alloy, ALUMINUM (Al)
ALUMINUM (Al)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

AA	Spectrometry - Atomic Absorption (AAS)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1504

3WGMRU (X) - Data for sample J17 are high.

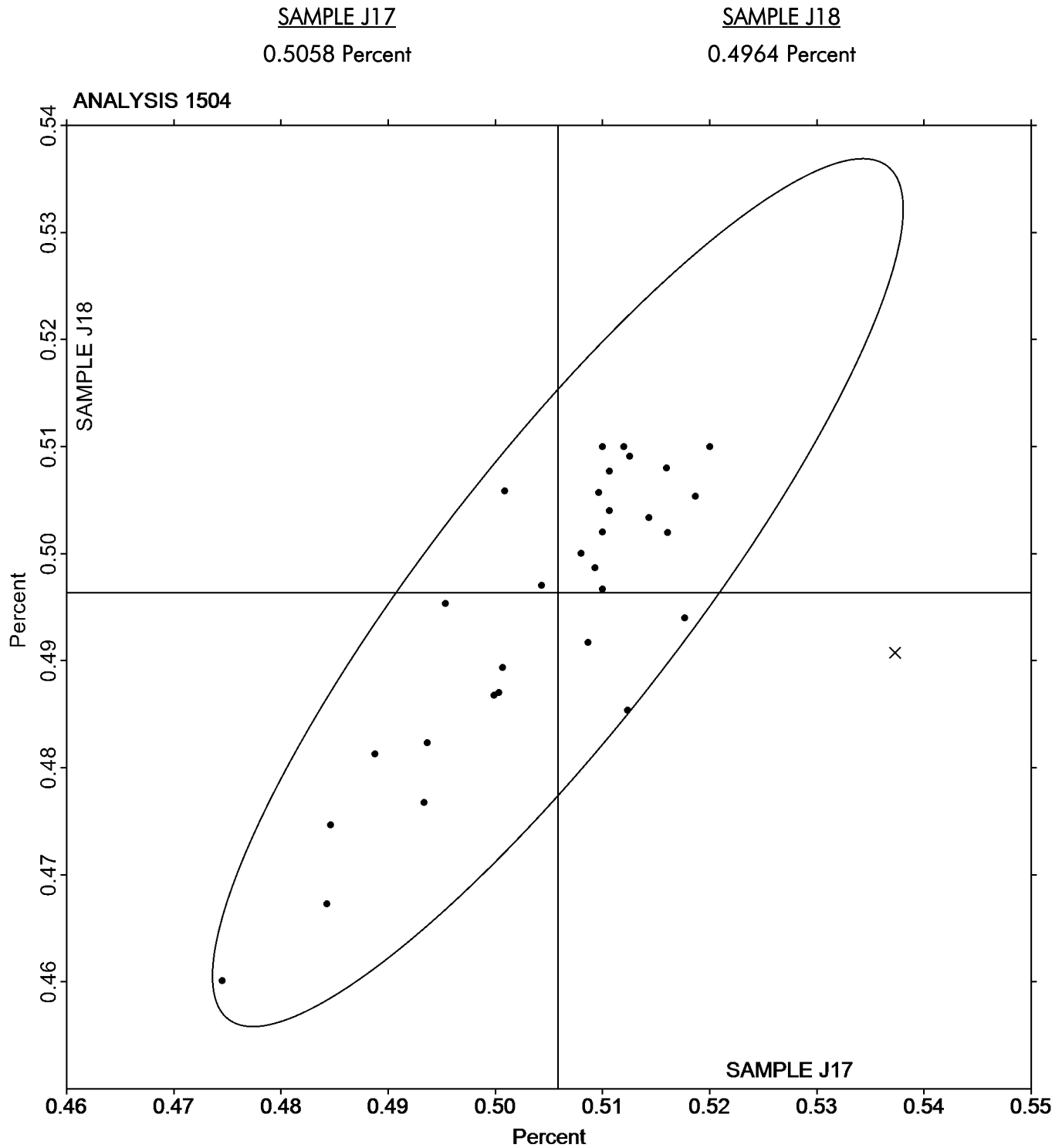
A8H2AL (X) - Data for both samples are low.

B6CYYB (X) - Data for sample J17 are low. Inconsistent within the determinations of sample J17.

DDATN8 (X) - Data for both samples are low. Inconsistent within the determinations of sample J17.

N47ATR (X) - Data for both samples are high.

QGZPJC (X) - Data for both samples are low.





Fasteners and Metals Interlaboratory Testing Program

Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		0.1125	0.0054	0.44	0.0860	0.0044	0.34	WD
3QRXFX	*	0.0782	-0.0289	-2.36	0.0430	-0.0386	-2.98	WD
3QVBAL		0.0997	-0.0074	-0.61	0.0790	-0.0027	-0.21	OE
3WGMRU		0.1080	0.0009	0.07	0.0813	-0.0004	-0.03	XX
4HGVUW		0.1083	0.0012	0.10	0.0820	0.0003	0.02	IC
6NHUG7		0.1357	0.0286	2.33	0.1077	0.0260	2.00	OE
6NL8CF		0.1020	-0.0051	-0.42	0.0909	0.0092	0.71	OE
77WC6W		0.0991	-0.0080	-0.65	0.0825	0.0008	0.06	OE
8GR6QT		0.1127	0.0056	0.45	0.0823	0.0007	0.05	IC
9Z7QGV	X	0.1000	-0.0071	-0.58	0.1767	0.0950	7.32	ED
A6PE9H		0.1073	0.0002	0.02	0.0870	0.0053	0.41	OE
A8H2AL		0.1083	0.0012	0.10	0.0857	0.0040	0.31	IC
B6CYYB		0.0983	-0.0088	-0.72	0.0703	-0.0113	-0.87	IC
DDATN8		0.0946	-0.0125	-1.02	0.0665	-0.0151	-1.17	ED
EFAFR9	*	0.0863	-0.0208	-1.70	0.0863	0.0047	0.36	OE
F9QCK7		0.1300	0.0229	1.87	0.1100	0.0283	2.18	OE
FA49L4		0.1143	0.0072	0.59	0.0890	0.0073	0.56	WD
FEYTZL		0.0802	-0.0269	-2.19	0.0613	-0.0203	-1.57	OE
FGZ2X4		0.0857	-0.0214	-1.75	0.0606	-0.0210	-1.62	GD
G7HGE8		0.1159	0.0088	0.72	0.0877	0.0061	0.47	WD
J22X8B		0.1180	0.0109	0.89	0.0813	-0.0003	-0.03	OE
JJEKKX		0.1120	0.0049	0.40	0.0841	0.0024	0.19	OE
KE28BB		0.1100	0.0029	0.24	0.0840	0.0023	0.18	OE
LBWZ9A		0.1060	-0.0011	-0.09	0.0930	0.0113	0.87	OE
LWGRKY		0.1037	-0.0034	-0.28	0.0790	-0.0027	-0.21	OE
MBF4GA		0.1061	-0.0010	-0.08	0.0762	-0.0055	-0.42	IC
MP8XWG		0.1087	0.0016	0.13	0.0797	-0.0020	-0.15	IC
MREFVD		0.1060	-0.0011	-0.09	0.0853	0.0037	0.28	OE
N47ATR		0.1060	-0.0011	-0.09	0.0725	-0.0092	-0.71	OE
P2EQ97		0.1060	-0.0011	-0.09	0.0836	0.0019	0.15	OE
PMD4X4		0.1030	-0.0041	-0.34	0.0892	0.0075	0.58	OE
PVRMH4		0.1113	0.0042	0.35	0.0693	-0.0123	-0.95	OE
Q4L982		0.1093	0.0022	0.18	0.0823	0.0007	0.05	XX
QGZPJC		0.1056	-0.0015	-0.12	0.0760	-0.0056	-0.43	WD
QXB49M		0.1033	-0.0038	-0.31	0.0764	-0.0053	-0.41	OE
QXJWB6		0.1039	-0.0032	-0.26	0.0739	-0.0078	-0.60	WD
RKG9DU	*	0.1420	0.0349	2.85	0.1133	0.0317	2.44	OE
UHBC23		0.1077	0.0006	0.05	0.0847	0.0030	0.23	WD
X2BND8		0.1033	-0.0038	-0.31	0.0853	0.0037	0.28	OE

Summary Statistics

		Sample J17		Sample J18	
Grand Means		0.1071	Percent	0.0817	Percent
Stnd Dev Btwn Labs		0.0122	Percent	0.0130	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 37 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1505

9Z7QGV (X) - Data for sample J18 are high. Inconsistent within the determinations of both samples.



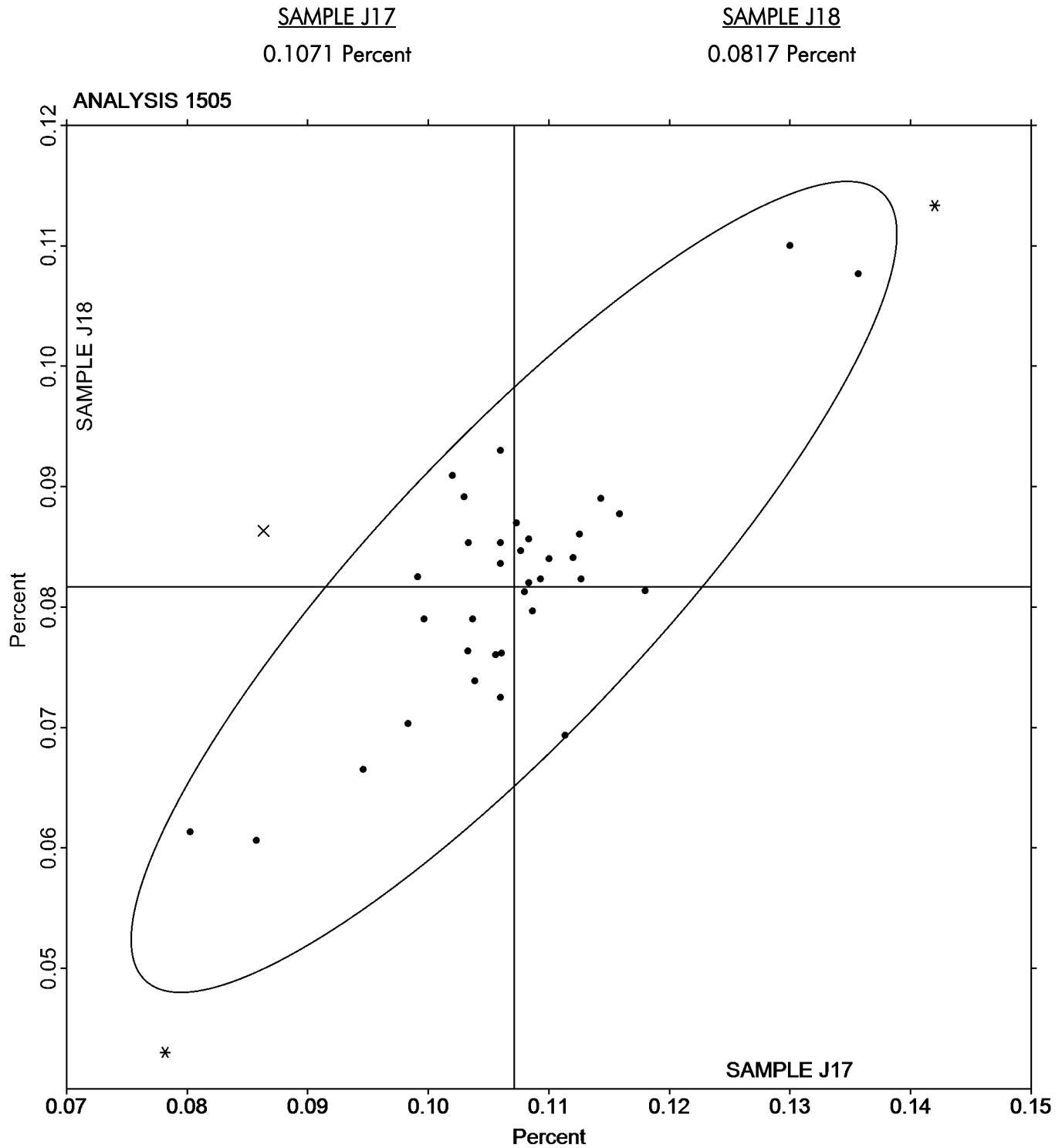
Fasteners and Metals Interlaboratory Testing Program

Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)

Cycle 154

2nd Qtr
2026





Fasteners and Metals Interlaboratory Testing Program

Analysis 1506

Nickel-based Alloy, NIOBIUM (Nb)
NIOBIUM (Nb)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		5.264	0.061	0.59	4.984	0.034	0.35	WD
3QRXFX		5.161	-0.042	-0.41	4.888	-0.063	-0.66	WD
3QVBAL		5.282	0.078	0.76	4.926	-0.025	-0.26	OE
3WGMURU		5.069	-0.135	-1.31	4.797	-0.153	-1.62	IC
4HGVUW		5.169	-0.035	-0.34	4.988	0.037	0.39	IC
6NHUG7		5.163	-0.040	-0.39	4.967	0.016	0.17	OE
6NL8CF		5.347	0.143	1.39	5.073	0.123	1.29	OE
77WC6W		5.240	0.036	0.35	5.075	0.125	1.31	XX
8GR6QT		5.195	-0.008	-0.08	4.906	-0.044	-0.47	IC
9Z7QGV		5.220	0.016	0.16	4.913	-0.037	-0.39	ED
A6PE9H		5.254	0.051	0.49	5.023	0.072	0.76	WD
B6CYYB		5.225	0.021	0.20	4.999	0.048	0.51	IC
DDATN8	X	4.432	-0.771	-7.52	4.469	-0.481	-5.07	ED
EFAFR9		5.040	-0.164	-1.60	4.800	-0.151	-1.59	OE
F9QCK7		5.203	0.000	0.00	4.930	-0.021	-0.22	OE
FA49L4		5.120	-0.084	-0.82	4.850	-0.100	-1.06	WD
FEYTZL		5.250	0.046	0.45	5.009	0.059	0.62	OE
FGZ2X4		5.441	0.237	2.31	5.169	0.218	2.30	GD
G7HGE8		5.261	0.058	0.56	5.003	0.052	0.55	WD
J22X8B		5.212	0.009	0.08	4.927	-0.024	-0.25	OE
JJEKKX		4.933	-0.270	-2.64	4.703	-0.247	-2.61	OE
KE28BB		5.255	0.051	0.50	4.959	0.008	0.09	OE
LBWZ9A		5.270	0.066	0.65	4.980	0.029	0.31	OE
LWGRKY		5.257	0.054	0.52	4.991	0.040	0.42	OE
MBF4GA		5.195	-0.009	-0.08	4.954	0.004	0.04	IC
MP8XWG		5.279	0.075	0.73	5.010	0.059	0.62	IC
MREFVD	X	5.427	0.223	2.18	4.687	-0.264	-2.78	OE
N47ATR		4.976	-0.228	-2.22	4.766	-0.185	-1.95	OE
P2EQ97		5.310	0.106	1.04	5.080	0.129	1.36	OE
PMD4X4		5.333	0.130	1.26	4.993	0.043	0.45	OE
PVRMH4	*	5.160	-0.044	-0.43	5.035	0.084	0.89	OE
Q4L982		5.240	0.037	0.36	4.957	0.007	0.07	XX
QGZPJC		5.205	0.001	0.01	4.944	-0.007	-0.07	WD
QXB49M		5.068	-0.135	-1.32	4.853	-0.097	-1.02	OE
QXJWB6		5.165	-0.038	-0.37	4.946	-0.005	-0.05	WD
RKG9DU	X	5.580	0.376	3.67	5.343	0.393	4.14	OE
UHBC23		5.160	-0.043	-0.42	4.923	-0.028	-0.29	WD
X2BND8	*	5.048	-0.156	-1.52	5.070	0.120	1.26	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	5.204	Percent	4.951	Percent
Stnd Dev Btwn Labs	0.103	Percent	0.095	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 34 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1506

Nickel-based Alloy, NIOBIUM (Nb)
NIOBIUM (Nb)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1506

DDATN8 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

MREFVD (X) - Data for sample J18 are low.

RKG9DU (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample J17.



Analysis 1506

Nickel-based Alloy, NIOBIUM (Nb)

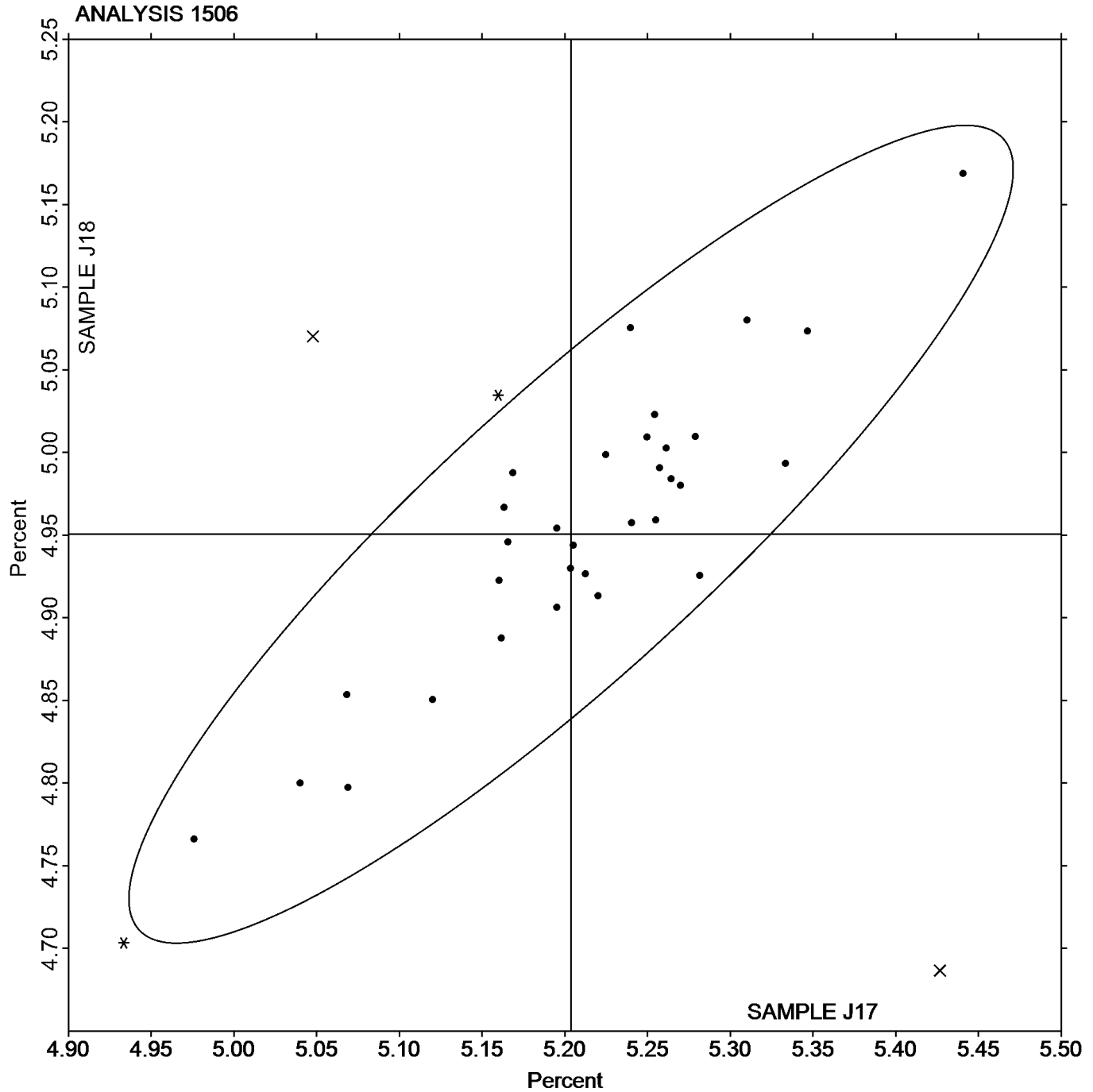
NIOBIUM (Nb)

SAMPLE J17

SAMPLE J18

5.204 Percent

4.951 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		0.9832	0.0241	1.10	1.016	0.0220	0.91	WD
3QRXFX		0.9721	0.0129	0.59	1.002	0.0088	0.36	WD
3QVBAL		0.9353	-0.0238	-1.09	0.9717	-0.0220	-0.91	OE
3WGMRU		0.9207	-0.0385	-1.76	0.9520	-0.0417	-1.72	IC
4HGVUW		0.9443	-0.0148	-0.68	0.9913	-0.0023	-0.10	IC
6NHUG7		0.9610	0.0019	0.09	1.023	0.0297	1.22	OE
6NL8CF		0.9680	0.0089	0.41	1.002	0.0087	0.36	OE
77WC6W		0.9591	-0.0001	0.00	0.9834	-0.0103	-0.42	OE
8GR6QT		0.9410	-0.0181	-0.83	0.9660	-0.0277	-1.14	IC
9Z7QGV	X	0.9567	-0.0025	-0.11	0.9400	-0.0537	-2.21	ED
A6PE9H		0.9340	-0.0251	-1.15	0.9873	-0.0063	-0.26	WD
B6CYYB		0.9953	0.0362	1.66	1.032	0.0387	1.59	IC
DDATN8	*	1.019	0.0602	2.76	1.048	0.0543	2.24	ED
EFAFR9		0.9267	-0.0325	-1.49	0.9633	-0.0303	-1.25	OE
F9QCK7		0.9800	0.0209	0.96	1.010	0.0163	0.67	OE
FA49L4		0.9580	-0.0011	-0.05	0.9920	-0.0017	-0.07	WD
FEYTZL		0.9625	0.0034	0.16	0.9858	-0.0078	-0.32	OE
FGZ2X4		0.9521	-0.0071	-0.32	0.9797	-0.0140	-0.58	GD
G7HGE8		0.9587	-0.0005	-0.02	0.9903	-0.0033	-0.14	WD
J22X8B		0.9460	-0.0131	-0.60	0.9633	-0.0303	-1.25	OE
JJEKKX		1.006	0.0469	2.15	1.050	0.0563	2.32	OE
KE28BB		0.9500	-0.0091	-0.42	0.9810	-0.0127	-0.52	OE
LBWZ9A		0.9580	-0.0011	-0.05	0.9950	0.0013	0.06	OE
LWGRKY		0.9610	0.0019	0.09	0.9863	-0.0073	-0.30	OE
MBF4GA		0.9748	0.0157	0.72	0.9993	0.0056	0.23	IC
MP8XWG		0.9520	-0.0071	-0.33	0.9993	0.0057	0.23	IC
MREFVD	X	1.080	0.1209	5.53	1.123	0.1297	5.34	OE
N47ATR		0.9730	0.0139	0.64	1.012	0.0183	0.76	OE
P2EQ97		0.9270	-0.0321	-1.47	0.9750	-0.0187	-0.77	OE
PMD4X4		0.9487	-0.0105	-0.48	0.9780	-0.0157	-0.64	OE
PVRMH4		0.9543	-0.0048	-0.22	0.9933	-0.0003	-0.01	XX
QGZPJC		0.9766	0.0175	0.80	1.008	0.0147	0.61	WD
QXB49M		0.9550	-0.0041	-0.19	0.9827	-0.0110	-0.45	OE
QXJWB6		0.9520	-0.0071	-0.32	0.9707	-0.0229	-0.94	WD
RKG9DU		0.9740	0.0149	0.68	1.040	0.0463	1.91	OE
UHBC23		0.9617	0.0025	0.12	0.9863	-0.0073	-0.30	WD
X2BND8		0.9280	-0.0311	-1.42	0.9603	-0.0333	-1.37	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	0.9591	Percent	0.9937	Percent
Std Dev Btwn Labs	0.0218	Percent	0.0243	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 35 of 37 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

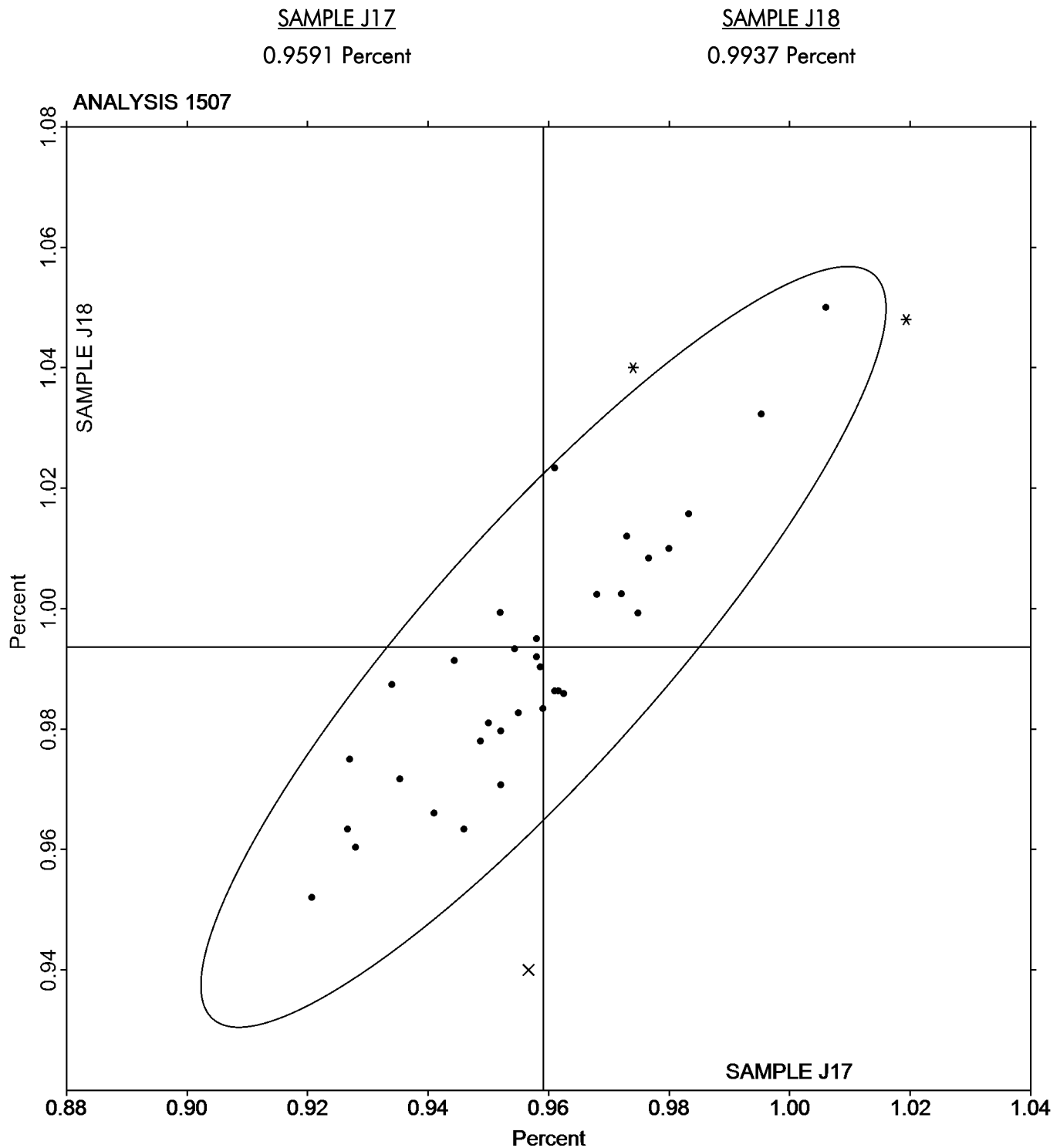
Comments on Assigned Data Flags for Test #1507

9Z7QGV (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

MREFVD (X) - Data for both samples are high. Possible Systematic Error.

Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		0.0195	-0.0125	-0.79	0.3109	-0.0067	-0.28	WD
3QRXFX		0.0261	-0.0059	-0.37	0.3210	0.0034	0.14	WD
3QVBAL		0.0328	0.0008	0.05	0.3060	-0.0116	-0.49	OE
3WGMURU		0.0165	-0.0154	-0.97	0.3130	-0.0046	-0.20	IC
4HGVUW		0.0203	-0.0117	-0.73	0.3193	0.0017	0.07	IC
6NHUG7		0.0287	-0.0032	-0.20	0.2790	-0.0386	-1.63	OE
6NL8CF		0.0510	0.0190	1.20	0.3087	-0.0090	-0.38	OE
77WC6W		0.0267	-0.0053	-0.33	0.3105	-0.0071	-0.30	OE
8GR6QT		0.0210	-0.0110	-0.69	0.3113	-0.0063	-0.27	IC
9Z7QGV		0.0600	0.0280	1.77	0.3167	-0.0010	-0.04	ED
A6PE9H		0.0136	-0.0184	-1.16	0.3180	0.0004	0.02	WD
B6CYYB		0.0236	-0.0084	-0.53	0.3797	0.0620	2.62	IC
DDATN8		0.0415	0.0095	0.60	0.3197	0.0020	0.09	ED
EFAFR9		0.0373	0.0054	0.34	0.3200	0.0024	0.10	OE
F9QCK7		0.0110	-0.0210	-1.32	0.2900	-0.0276	-1.17	OE
FA49L4		0.0190	-0.0130	-0.82	0.3143	-0.0033	-0.14	WD
FEYTZL		0.0325	0.0006	0.04	0.2663	-0.0514	-2.17	OE
FGZ2X4		0.00170	-0.0303	-1.91	0.3139	-0.0037	-0.16	GD
G7HGE8		0.0296	-0.0024	-0.15	0.2994	-0.0183	-0.77	WD
J22X8B	X	0.1400	0.1080	6.81	0.3300	0.0124	0.52	OE
JJEKKX		0.0448	0.0129	0.81	0.2940	-0.0236	-1.00	OE
KE28BB		0.0314	-0.0006	-0.04	0.2950	-0.0226	-0.96	OE
LBWZ9A		0.0447	0.0127	0.80	0.3340	0.0164	0.69	OE
LWGRKY		0.0275	-0.0045	-0.28	0.3177	0.0000	0.00	OE
MBF4GA		0.0181	-0.0138	-0.87	0.3218	0.0042	0.18	IC
MP8XWG		0.0207	-0.0113	-0.71	0.3183	0.0007	0.03	IC
MREFVD	*	0.0423	0.0104	0.65	0.3827	0.0650	2.75	OE
N47ATR		0.0474	0.0154	0.97	0.3170	-0.0006	-0.03	OE
P2EQ97		0.0448	0.0128	0.81	0.3130	-0.0046	-0.20	OE
PMD4X4	*	0.0760	0.0440	2.77	0.3593	0.0417	1.76	OE
PVRMH4		0.0349	0.0029	0.19	0.2828	-0.0349	-1.47	OE
Q4L982		0.0264	-0.0055	-0.35	0.3283	0.0107	0.45	XX
QGZPJC		0.0235	-0.0085	-0.53	0.3230	0.0054	0.23	WD
QXB49M		0.0281	-0.0039	-0.24	0.3385	0.0209	0.88	OE
QXJWB6		0.0205	-0.0115	-0.72	0.3107	-0.0069	-0.29	WD
RKG9DU		0.0393	0.0073	0.46	0.3553	0.0377	1.59	OE
UHBC23		0.0267	-0.0053	-0.33	0.3260	0.0084	0.35	WD
X2BND8		0.0730	0.0410	2.59	0.3170	-0.0006	-0.03	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	0.0320	Percent	0.3176	Percent
Stnd Dev Btwn Labs	0.0159	Percent	0.0237	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 37 of 38 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1508

J22X8B (X) - Data for sample J17 are high.



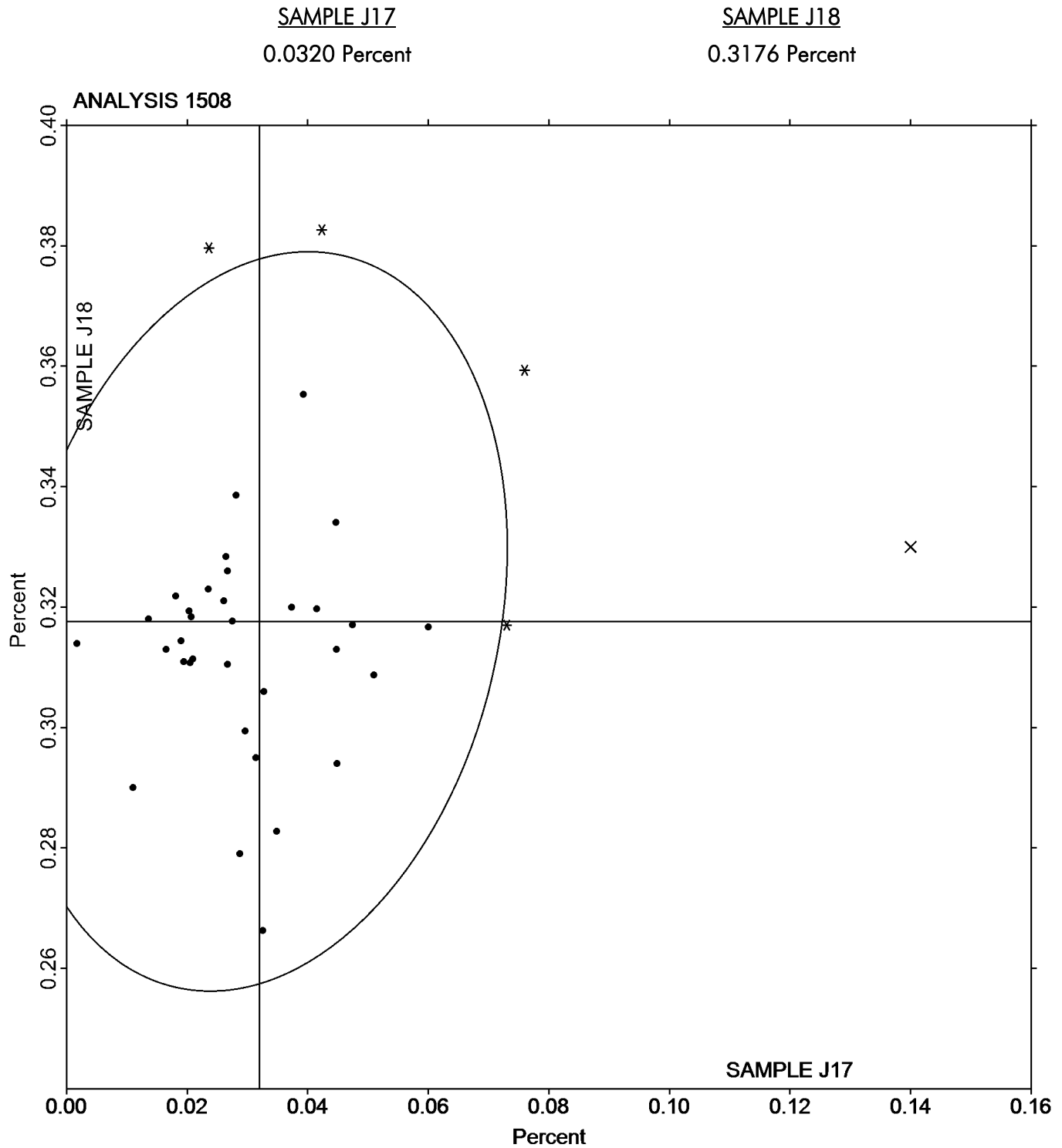
Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 154

2nd Qtr
2026





Fasteners and Metals Interlaboratory Testing Program

Analysis 1509

Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample J17			Sample J18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VBH22		53.20	0.08	0.21	52.79	-0.09	-0.24	BD
3QRXFX		52.93	-0.19	-0.52	52.67	-0.22	-0.57	WD
3QVBAL		53.00	-0.12	-0.34	52.75	-0.14	-0.36	OE
3WGMRU		53.07	-0.06	-0.16	52.80	-0.09	-0.23	XX
4HGVUW		52.30	-0.82	-2.28	51.99	-0.89	-2.34	IC
6NHUG7		53.00	-0.12	-0.34	52.53	-0.35	-0.92	OE
6NL8CF		53.03	-0.09	-0.25	52.87	-0.02	-0.05	OE
77WC6W		52.46	-0.66	-1.84	52.79	-0.09	-0.24	OE
8GR6QT	X	52.58	-0.54	-1.50	53.61	0.73	1.91	IC
9Z7QGV		52.88	-0.24	-0.68	52.25	-0.63	-1.65	ED
A6PE9H		53.23	0.11	0.30	53.03	0.15	0.38	WD
A8H2AL	X	47.10	-6.02	-16.69	52.09	-0.79	-2.08	IC
B6CYYB	*	52.14	-0.98	-2.72	51.74	-1.14	-3.00	IC
DDATN8	X	51.16	-1.96	-5.45	50.37	-2.52	-6.60	ED
F9QCK7		53.03	-0.09	-0.25	52.83	-0.05	-0.13	OE
FA49L4		53.46	0.34	0.93	53.13	0.25	0.65	WD
FEYTZL		53.49	0.36	1.01	52.90	0.01	0.03	OE
FGZ2X4		53.27	0.14	0.40	53.04	0.16	0.42	GD
J22X8B		52.76	-0.36	-1.00	52.83	-0.05	-0.14	OE
JJEKKX		53.67	0.54	1.50	53.43	0.55	1.44	OE
KE28BB		53.29	0.17	0.46	53.01	0.13	0.33	OE
LBWZ9A		53.10	-0.02	-0.07	52.90	0.02	0.04	OE
LWGRKY		53.41	0.29	0.80	53.31	0.42	1.11	OE
MBF4GA		53.61	0.48	1.33	53.05	0.17	0.45	IC
MP8XWG		53.38	0.25	0.70	53.05	0.16	0.43	IC
MREFVD		53.60	0.48	1.32	53.57	0.68	1.79	OE
N47ATR	X	54.81	1.69	4.67	54.57	1.69	4.42	OE
P2EQ97		52.90	-0.22	-0.62	52.80	-0.08	-0.22	OE
PMD4X4		52.76	-0.36	-1.00	52.56	-0.32	-0.85	OE
PVRMH4		53.05	-0.07	-0.20	53.02	0.13	0.35	OE
Q4L982		53.47	0.35	0.97	52.86	-0.02	-0.05	XX
QGZPJC		53.61	0.49	1.35	53.33	0.44	1.17	WD
QXB49M		53.08	-0.05	-0.14	52.72	-0.16	-0.43	WD
QXJWB6		53.16	0.04	0.11	52.95	0.06	0.17	WD
RKG9DU		53.20	0.08	0.21	53.33	0.45	1.18	OE
UHBC23		53.29	0.16	0.45	52.97	0.09	0.23	WD
X2BND8		53.25	0.13	0.35	53.37	0.49	1.27	OE

Summary Statistics

	Sample J17		Sample J18	
Grand Means	53.12	Percent	52.88	Percent
Std Dev Btwn Labs	0.36	Percent	0.38	Percent

Samples J17, J18 : Alloy 718, Alloy 718

Statistics based on 33 of 37 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1509

Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

BD	By Difference	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1509

8GR6QT (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

A8H2AL (X) - Data for sample J17 are low.

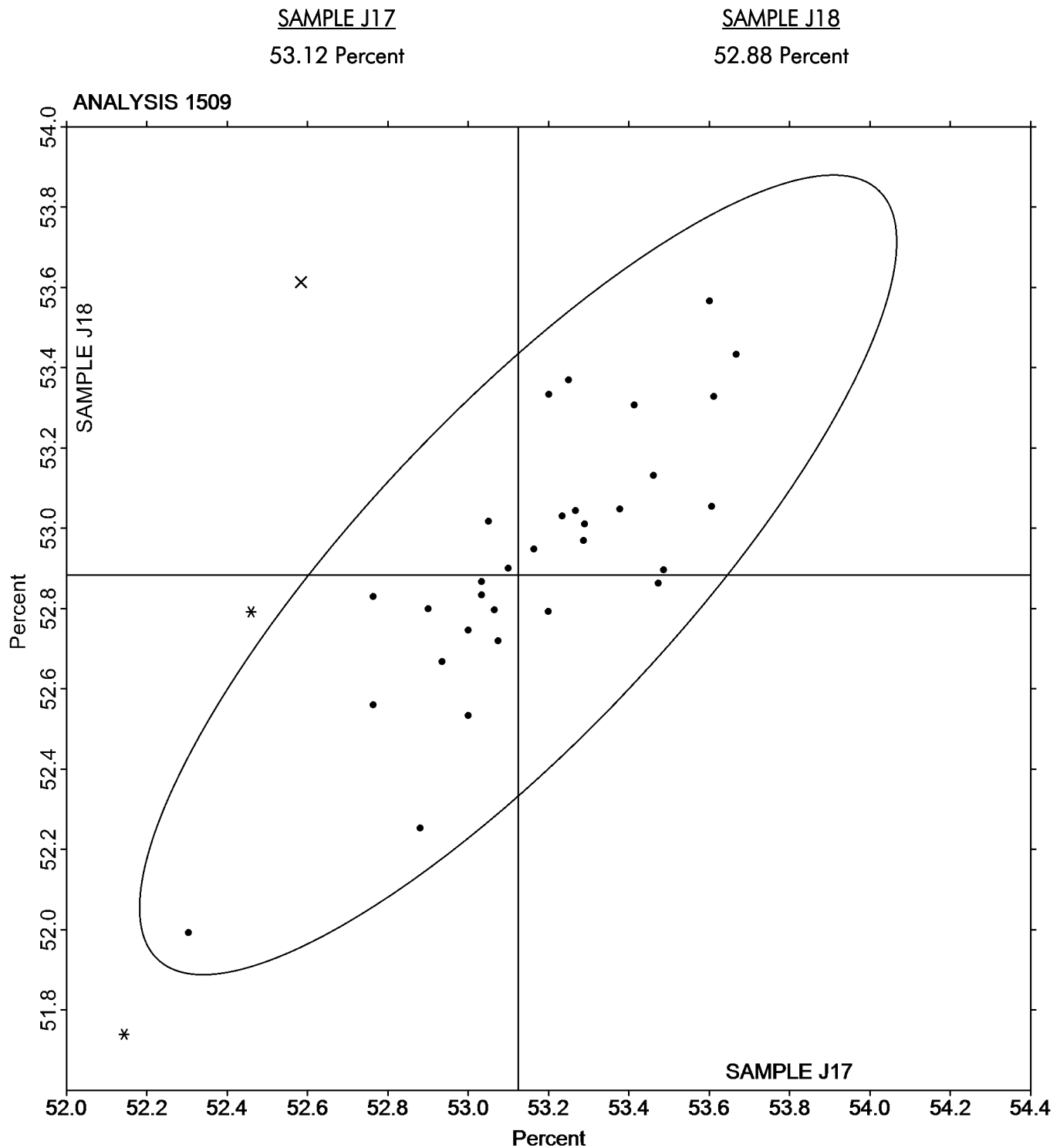
DDATN8 (X) - Data for both samples are low. Possible Systematic Error.

N47ATR (X) - Data for both samples are high. Possible Systematic Error.

Analysis 1509

Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

**2nd Qtr
2026**





Fasteners and Metals Interlaboratory Testing Program

Analysis 1540

Aluminum, ZINC (Zn)
ZINC (Zn)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.0165	-0.0010	-0.52	0.0309	-0.0006	-0.34	OE
2JC3QH		0.0220	0.0046	2.42	0.0317	0.0001	0.05	OE
3HK9NK		0.0143	-0.0031	-1.65	0.0300	-0.0016	-0.83	OE
6LEPEJ		0.0175	0.0001	0.05	0.0319	0.0003	0.16	XX
6NL8CF		0.0193	0.0018	0.97	0.0347	0.0031	1.65	OE
6TTK9R		0.0150	-0.0024	-1.30	0.0270	-0.0046	-2.42	OE
98JPT9		0.0176	0.0002	0.08	0.0316	0.0000	0.02	OE
9AMKDB	X	0.00207	-0.0154	-8.17	0.00278	-0.0288	-15.22	OE
9ZHDXB		0.0162	-0.0012	-0.64	0.0302	-0.0013	-0.71	OE
B4RGMP		0.0160	-0.0014	-0.77	0.0300	-0.0016	-0.85	OE
B6CYYB	X	0.000100	-0.0173	-9.22	0.00717	-0.0244	-12.90	IC
C2ZRQE		0.0169	-0.0005	-0.27	0.0279	-0.0036	-1.92	OE
C87LKB		0.0175	0.0001	0.03	0.0302	-0.0014	-0.72	OE
CEB64A		0.0168	-0.0006	-0.34	0.0308	-0.0008	-0.41	IC
CUGR7V		0.0189	0.0014	0.76	0.0322	0.0006	0.32	OE
DVRQ3Q		0.0168	-0.0006	-0.34	0.0313	-0.0003	-0.14	OE
EFAFR9		0.0157	-0.0018	-0.94	0.0290	-0.0026	-1.36	OE
EN9VLM		0.0174	0.0000	-0.02	0.0321	0.0005	0.26	OE
FEYTZL		0.0171	-0.0003	-0.18	0.0316	0.0001	0.03	IC
FV7WFL		0.0150	-0.0024	-1.30	0.0300	-0.0016	-0.83	XX
GU3XAH		0.0184	0.0010	0.51	0.0325	0.0009	0.49	OE
HXKBM6		0.0180	0.0006	0.30	0.0360	0.0044	2.34	IC
JCYXKE		0.0165	-0.0009	-0.48	0.0300	-0.0015	-0.81	OE
K8HTLJ		0.0151	-0.0023	-1.23	0.0308	-0.0008	-0.41	OE
KCT4CT		0.0167	-0.0008	-0.41	0.0320	0.0004	0.23	IC
KE28BB		0.0175	0.0001	0.03	0.0325	0.0009	0.49	OE
LWGRKY		0.0167	-0.0007	-0.39	0.0316	0.0000	0.00	OE
MREFVD		0.0220	0.0046	2.42	0.0330	0.0014	0.76	OE
N63RVU		0.0161	-0.0013	-0.71	0.0306	-0.0010	-0.53	OE
NAEQ99		0.0168	-0.0006	-0.32	0.0317	0.0001	0.07	OE
PHJ88R		0.0170	-0.0005	-0.25	0.0308	-0.0007	-0.39	OE
Q4L982		0.0196	0.0021	1.13	0.0362	0.0046	2.45	XX
QXB49M		0.0176	0.0002	0.08	0.0326	0.0010	0.54	OE
RZZPG4		0.0197	0.0023	1.20	0.0341	0.0025	1.34	OE
TMAFAP		0.0171	-0.0004	-0.20	0.0316	0.0000	0.02	OE
TTCFTR		0.0168	-0.0007	-0.36	0.0315	-0.0001	-0.05	OE
UKCNC9	X	0.0100	-0.0074	-3.96	0.0300	-0.0016	-0.83	OE
ZJHXWJ	*	0.0225	0.0050	2.67	0.0336	0.0020	1.07	OE
ZXXV2J		0.0174	0.0000	0.00	0.0324	0.0008	0.44	OE

Summary Statistics

	Sample A17		Sample A18	
Grand Means	0.0174	Percent	0.0316	Percent
Stnd Dev Btwn Labs	0.0019	Percent	0.0019	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 36 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program
Analysis 1540
Aluminum, ZINC (Zn)
ZINC (Zn)

Cycle 154
2nd Qtr
2026

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1540

9AMKDB (X) - Data for both samples are low.

B6CYYB (X) - Data for both samples are low. Inconsistent within the determinations of sample A18.

UKCNC9 (X) - Data for sample A17 are low.

Analysis 1540

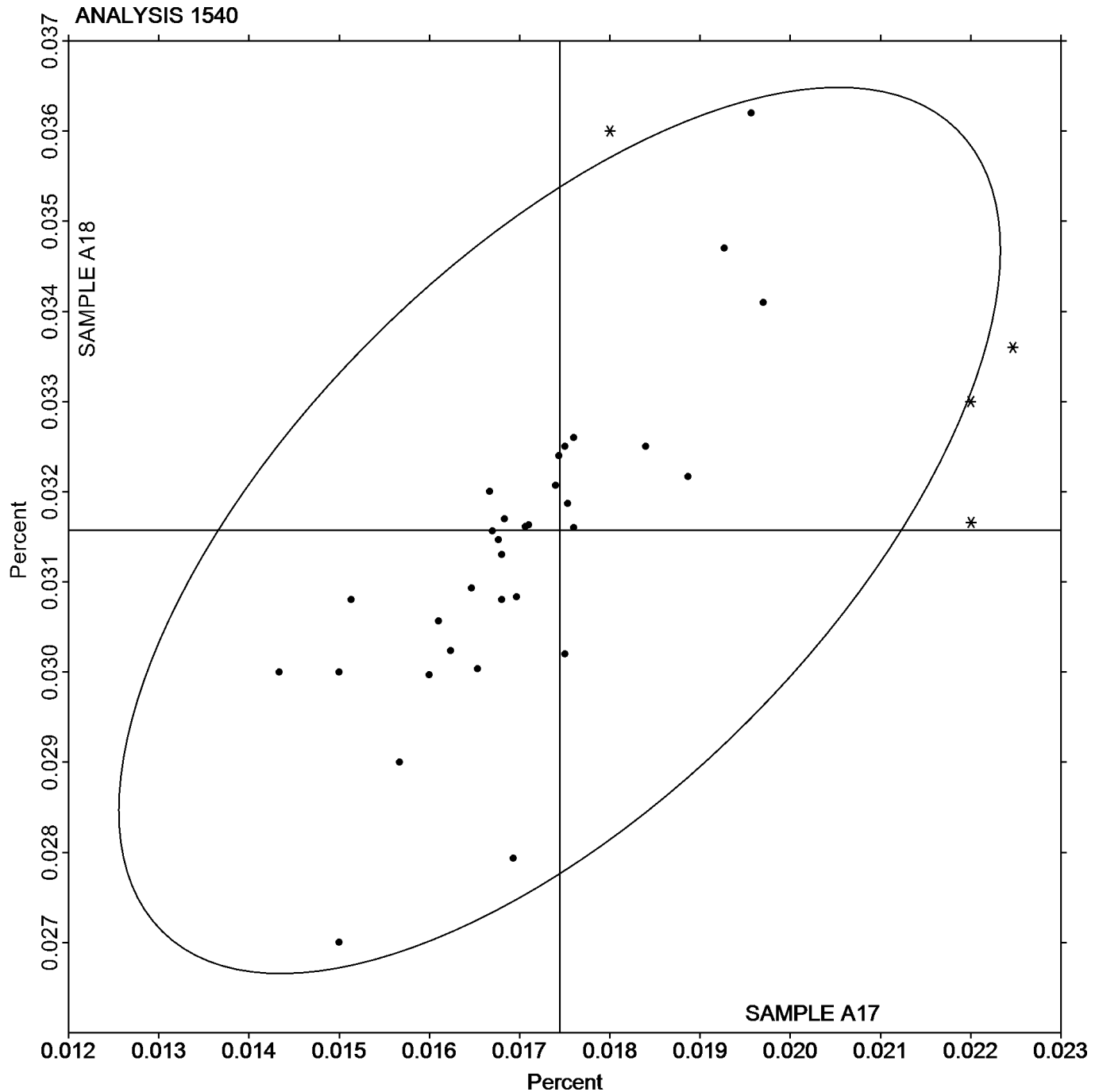
Aluminum, ZINC (Zn)
ZINC (Zn)

SAMPLE A17

0.0174 Percent

SAMPLE A18

0.0316 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1541

Aluminum, COPPER (Cu)
COPPER (Cu)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.0106	-0.0001	-0.16	0.0365	0.0004	0.29	OE
2JC3QH		0.0121	0.0014	1.78	0.0359	-0.0003	-0.17	OE
3HK9NK		0.0100	-0.0007	-0.92	0.0333	-0.0028	-1.91	OE
6LEPEJ	X	0.00890	-0.0018	-2.30	0.0289	-0.0072	-4.93	XX
6NL8CF		0.0108	0.0001	0.09	0.0352	-0.0009	-0.65	OE
6TTK9R		0.0107	-0.0001	-0.08	0.0357	-0.0004	-0.31	OE
98JPT9		0.0119	0.0012	1.47	0.0367	0.0006	0.38	OE
9AMKDB		0.00998	-0.0008	-0.95	0.0339	-0.0022	-1.50	OE
9ZHDXB		0.0103	-0.0004	-0.50	0.0349	-0.0012	-0.81	OE
B4RGMP		0.0108	0.0001	0.09	0.0366	0.0005	0.33	OE
B6CYYB	X	0.00803	-0.0027	-3.39	0.0219	-0.0142	-9.79	IC
C2ZRQE	X	0.00213	-0.0086	-10.79	0.0331	-0.0030	-2.09	OE
C87LKB		0.0104	-0.0003	-0.42	0.0357	-0.0004	-0.29	OE
CEB64A		0.0103	-0.0004	-0.54	0.0363	0.0002	0.13	IC
CUGR7V		0.00980	-0.0009	-1.17	0.0343	-0.0018	-1.25	OE
DVRQ3Q		0.0103	-0.0004	-0.50	0.0369	0.0008	0.52	OE
EFAFR9		0.00933	-0.0014	-1.75	0.0350	-0.0011	-0.77	OE
EN9VLM		0.0103	-0.0004	-0.54	0.0338	-0.0023	-1.57	OE
FEYTZL		0.0116	0.0009	1.09	0.0394	0.0033	2.23	IC
FV7WFL		0.0103	-0.0004	-0.50	0.0347	-0.0014	-1.00	XX
GU3XAH		0.0121	0.0013	1.68	0.0377	0.0016	1.11	OE
JCYXKE		0.0100	-0.0007	-0.92	0.0350	-0.0011	-0.77	OE
K8HTLJ		0.0111	0.0004	0.50	0.0369	0.0008	0.56	OE
KCT4CT		0.0113	0.0006	0.76	0.0373	0.0012	0.84	IC
KE28BB		0.0106	-0.0001	-0.16	0.0356	-0.0005	-0.35	OE
LBWZ9A		0.0111	0.0004	0.46	0.0365	0.0004	0.26	OE
LWGRKY		0.0107	-0.0001	-0.08	0.0345	-0.0016	-1.13	OE
MREFVD		0.0117	0.0009	1.17	0.0373	0.0012	0.84	OE
N63RVU	X	0.0105	-0.0002	-0.25	0.0407	0.0046	3.15	OE
NAEQ99		0.0116	0.0008	1.05	0.0383	0.0022	1.48	OE
PHJ88R		0.0107	0.0000	0.00	0.0374	0.0013	0.90	OE
Q4L982		0.0110	0.0002	0.30	0.0388	0.0027	1.82	XX
QXB49M		0.0123	0.0016	1.97	0.0382	0.0021	1.41	OE
RZZPG4		0.0114	0.0006	0.80	0.0362	0.0001	0.03	OE
TMAFAP		0.00997	-0.0008	-0.96	0.0362	0.0001	0.09	OE
TTCFTR		0.00983	-0.0009	-1.13	0.0363	0.0002	0.15	OE
UKCNC9		0.00900	-0.0017	-2.17	0.0345	-0.0016	-1.11	OE
ZJHXWJ	X	0.2145	0.2038	255.73	0.0399	0.0038	2.62	OE
ZXXV2J		0.0109	0.0002	0.25	0.0364	0.0003	0.22	OE

Summary Statistics

	Sample A17		Sample A18	
Grand Means	0.0107	Percent	0.0361	Percent
Stnd Dev Btwn Labs	0.0008	Percent	0.0015	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 34 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1541

Aluminum, COPPER (Cu)
COPPER (Cu)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1541

6LEPEJ (X) - Data for sample A18 are low.

B6CYYB (X) - Data for both samples are low. Inconsistent within the determinations of sample A17.

C2ZRQE (X) - Data for sample A17 are low.

N63RVU (X) - Data for sample A18 are high.

ZJHXWJ (X) - Data for sample A17 are extreme.

Analysis 1541

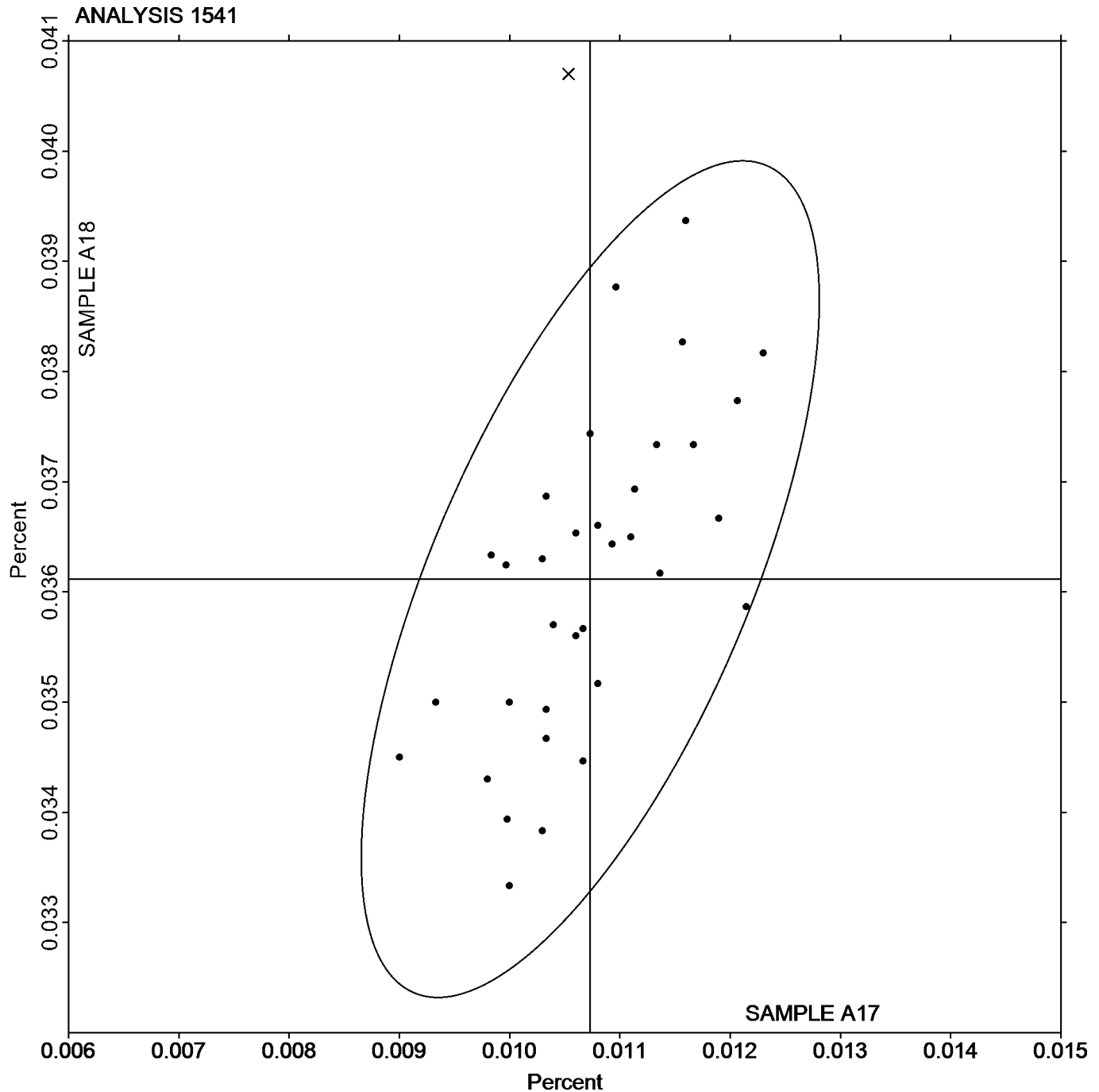
Aluminum, COPPER (Cu)
COPPER (Cu)

SAMPLE A17

0.0107 Percent

SAMPLE A18

0.0361 Percent





Fasteners and Metals Interlaboratory Testing Program
Analysis 1542
Aluminum, IRON (Fe)
IRON (Fe)

Cycle 154
2nd Qtr
2026

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.1936	-0.0045	-0.63	0.1794	-0.0037	-0.60	OE
2JC3QH		0.1954	-0.0027	-0.38	0.1768	-0.0063	-1.01	OE
3HK9NK		0.2000	0.0019	0.27	0.1800	-0.0031	-0.50	OE
6LEPEJ		0.2013	0.0033	0.46	0.1840	0.0009	0.15	XX
6NL8CF	X	0.1897	-0.0084	-1.18	0.0103	-0.1727	-27.81	OE
6TTK9R		0.1907	-0.0074	-1.04	0.1770	-0.0061	-0.98	OE
98JPT9		0.2000	0.0019	0.27	0.1843	0.0013	0.20	OE
9AMKDB		0.1923	-0.0057	-0.81	0.1793	-0.0038	-0.61	OE
9ZHDXB		0.1982	0.0001	0.02	0.1833	0.0003	0.04	OE
B4RGMP		0.1970	-0.0010	-0.14	0.1820	-0.0011	-0.17	OE
B6CYYB		0.2000	0.0019	0.27	0.1880	0.0049	0.79	IC
C2ZRQE	X	0.00213	-0.1959	-27.68	0.1780	-0.0051	-0.82	OE
C87LKB		0.1910	-0.0071	-1.00	0.1793	-0.0037	-0.60	OE
CEB64A		0.1990	0.0009	0.13	0.1810	-0.0021	-0.33	IC
CUGR7V		0.1859	-0.0122	-1.72	0.1708	-0.0123	-1.98	OE
DVRQ3Q		0.1972	-0.0009	-0.13	0.1830	0.0000	-0.01	OE
EFAFR9		0.1933	-0.0047	-0.67	0.1800	-0.0031	-0.50	OE
EN9VLM		0.1943	-0.0037	-0.53	0.1767	-0.0064	-1.03	OE
FEYTZL		0.1877	-0.0103	-1.46	0.1785	-0.0045	-0.73	IC
FV7WFL		0.1940	-0.0041	-0.57	0.1787	-0.0044	-0.71	XX
GU3XAH		0.1947	-0.0034	-0.48	0.1817	-0.0014	-0.23	OE
HXKBM6	*	0.1930	-0.0051	-0.71	0.1880	0.0049	0.79	IC
JCYXKE		0.2007	0.0026	0.37	0.1853	0.0023	0.36	OE
K8HTLJ		0.1983	0.0003	0.04	0.1853	0.0023	0.36	OE
KCT4CT		0.1943	-0.0037	-0.53	0.1787	-0.0044	-0.71	IC
KE28BB		0.1960	-0.0021	-0.29	0.1800	-0.0031	-0.50	OE
LBWZ9A		0.2150	0.0169	2.39	0.1980	0.0149	2.40	OE
LWGRKY		0.1977	-0.0004	-0.05	0.1830	-0.0001	-0.01	OE
MREFVD		0.2023	0.0043	0.60	0.1843	0.0013	0.20	OE
N63RVU		0.2060	0.0079	1.12	0.1917	0.0086	1.38	OE
NAEQ99		0.1988	0.0007	0.10	0.1873	0.0042	0.67	OE
PHJ88R		0.2113	0.0133	1.88	0.1943	0.0113	1.81	OE
Q4L982		0.1973	-0.0007	-0.10	0.1820	-0.0011	-0.17	XX
QXB49M		0.1949	-0.0031	-0.44	0.1814	-0.0016	-0.26	OE
RZZPG4	*	0.2157	0.0176	2.49	0.2003	0.0173	2.78	OE
TMAFAP		0.1898	-0.0082	-1.16	0.1769	-0.0062	-1.00	OE
TTCFTR	X	0.2003	0.0023	0.32	0.1580	-0.0251	-4.04	OE
UKCNC9		0.1940	-0.0041	-0.57	0.1825	-0.0006	-0.09	OE
ZJHXWJ		0.2145	0.0164	2.32	0.1941	0.0111	1.78	OE
ZXXV2J		0.1977	-0.0004	-0.05	0.1817	-0.0014	-0.22	OE



Fasteners and Metals Interlaboratory Testing Program
Analysis 1542
Aluminum, IRON (Fe)
IRON (Fe)

Cycle 154
2nd Qtr
2026

Summary Statistics

	<u>Sample A17</u>		<u>Sample A18</u>	
Grand Means	0.1981	Percent	0.1831	Percent
Stnd Dev Btwn Labs	0.0071	Percent	0.0062	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 36 of 40 reporting participants

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1542

6NL8CF (X) - Data for sample A18 are low.

C2ZRQE (X) - Data for sample A17 are low.

TTCFTR (X) - Data for sample A18 are low. Inconsistent within the determinations of both samples.



Analysis 1542

Aluminum, IRON (Fe)

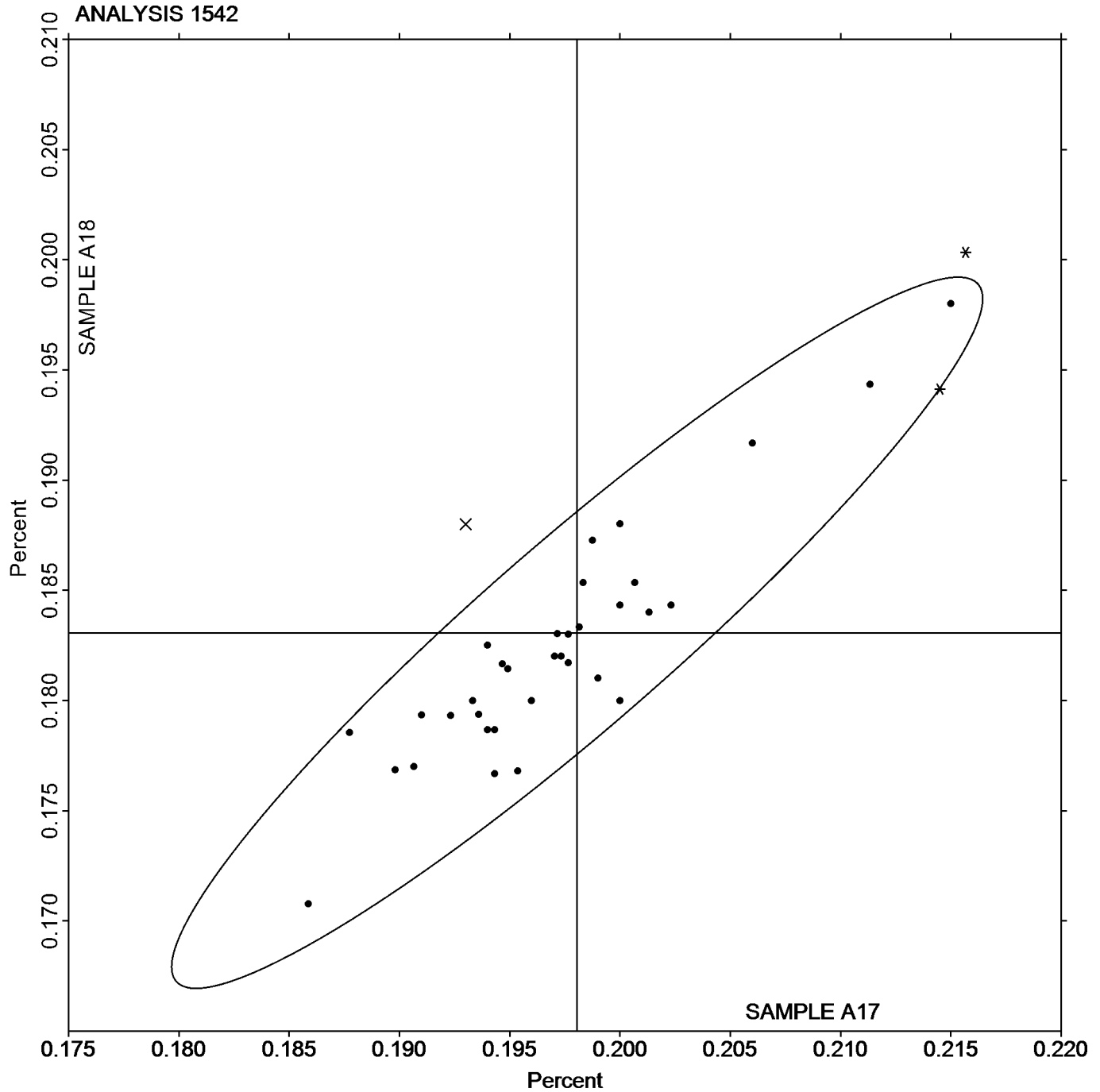
IRON (Fe)

SAMPLE A17

SAMPLE A18

0.1981 Percent

0.1831 Percent



**Fasteners and Metals Interlaboratory Testing Program****Cycle 154****Analysis 1543****2nd Qtr****Aluminum, SILICON (Si)****2026**

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.5107	0.0119	0.95	0.4673	0.0107	0.93	OE
2JC3QH		0.4985	-0.0002	-0.02	0.4523	-0.0043	-0.37	OE
3HK9NK		0.4933	-0.0054	-0.43	0.4567	0.0001	0.01	OE
6LEPEJ		0.5173	0.0186	1.48	0.4767	0.0201	1.74	XX
6NL8CF		0.5030	0.0043	0.34	0.4603	0.0037	0.32	OE
6TTK9R		0.4917	-0.0071	-0.56	0.4520	-0.0046	-0.40	OE
98JPT9		0.5050	0.0063	0.50	0.4617	0.0051	0.44	OE
9AMKDB		0.4919	-0.0068	-0.54	0.4558	-0.0008	-0.07	OE
9ZHDXB		0.5100	0.0113	0.90	0.4631	0.0065	0.56	OE
B4RGMP		0.5059	0.0072	0.57	0.4608	0.0042	0.36	OE
B6CYYB		0.4947	-0.0041	-0.32	0.4617	0.0051	0.44	IC
C2ZRQE		0.4953	-0.0034	-0.27	0.4423	-0.0143	-1.24	OE
C87LKB		0.5157	0.0169	1.35	0.4613	0.0047	0.41	OE
CEB64A		0.4737	-0.0251	-2.00	0.4397	-0.0169	-1.47	IC
CUGR7V		0.4988	0.0000	0.00	0.4605	0.0039	0.34	OE
DVRQ3Q		0.5041	0.0054	0.43	0.4648	0.0082	0.71	OE
EFAFR9		0.4900	-0.0087	-0.70	0.4467	-0.0099	-0.86	OE
EN9VLM		0.4867	-0.0121	-0.96	0.4460	-0.0106	-0.92	OE
FEYTZL		0.4883	-0.0104	-0.83	0.4408	-0.0158	-1.37	IC
FV7WFL		0.4737	-0.0251	-2.00	0.4323	-0.0243	-2.10	XX
GU3XAH		0.5053	0.0066	0.52	0.4643	0.0077	0.67	OE
HXKBM6		0.4780	-0.0207	-1.65	0.4350	-0.0216	-1.87	IC
JCYXKE		0.4900	-0.0087	-0.70	0.4530	-0.0036	-0.31	OE
K8HTLJ		0.5033	0.0046	0.37	0.4567	0.0001	0.01	OE
KCT4CT		0.5040	0.0053	0.42	0.4660	0.0094	0.81	IC
KE28BB		0.4990	0.0003	0.02	0.4590	0.0024	0.21	OE
LBWZ9A		0.4760	-0.0227	-1.81	0.4350	-0.0216	-1.87	OE
LWGRKY		0.4940	-0.0047	-0.38	0.4587	0.0021	0.18	OE
MREFVD		0.5067	0.0079	0.63	0.4573	0.0007	0.06	OE
N63RVU		0.4843	-0.0144	-1.15	0.4393	-0.0173	-1.50	OE
NAEQ99		0.5083	0.0096	0.76	0.4670	0.0104	0.90	OE
PHJ88R		0.5117	0.0129	1.03	0.4700	0.0134	1.16	OE
PXVKNP		0.4880	-0.0107	-0.85	0.4420	-0.0146	-1.27	OE
Q4L982		0.4843	-0.0144	-1.15	0.4557	-0.0009	-0.08	XX
QXB49M		0.5001	0.0014	0.11	0.4581	0.0015	0.13	OE
RZZPG4		0.5123	0.0136	1.08	0.4670	0.0104	0.90	OE
TMAFAP		0.5019	0.0031	0.25	0.4585	0.0019	0.16	OE
TTCFTR		0.5273	0.0286	2.28	0.4827	0.0261	2.26	OE
UKCNC9		0.4980	-0.0007	-0.06	0.4560	-0.0006	-0.05	OE
ZJHXWJ		0.5200	0.0213	1.69	0.4718	0.0152	1.32	OE
ZXXV2J		0.5075	0.0088	0.70	0.4649	0.0083	0.72	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 154

Analysis 1543

2nd Qtr

Aluminum, SILICON (Si)

SILICON (Si)

2026

Summary Statistics

	<u>Sample A17</u>		<u>Sample A18</u>	
Grand Means	0.4987	Percent	0.4566	Percent
Stnd Dev Btwn Labs	0.0126	Percent	0.0115	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 41 of 41 reporting participants

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element



Analysis 1543

2nd Qtr

Aluminum, SILICON (Si)

2026

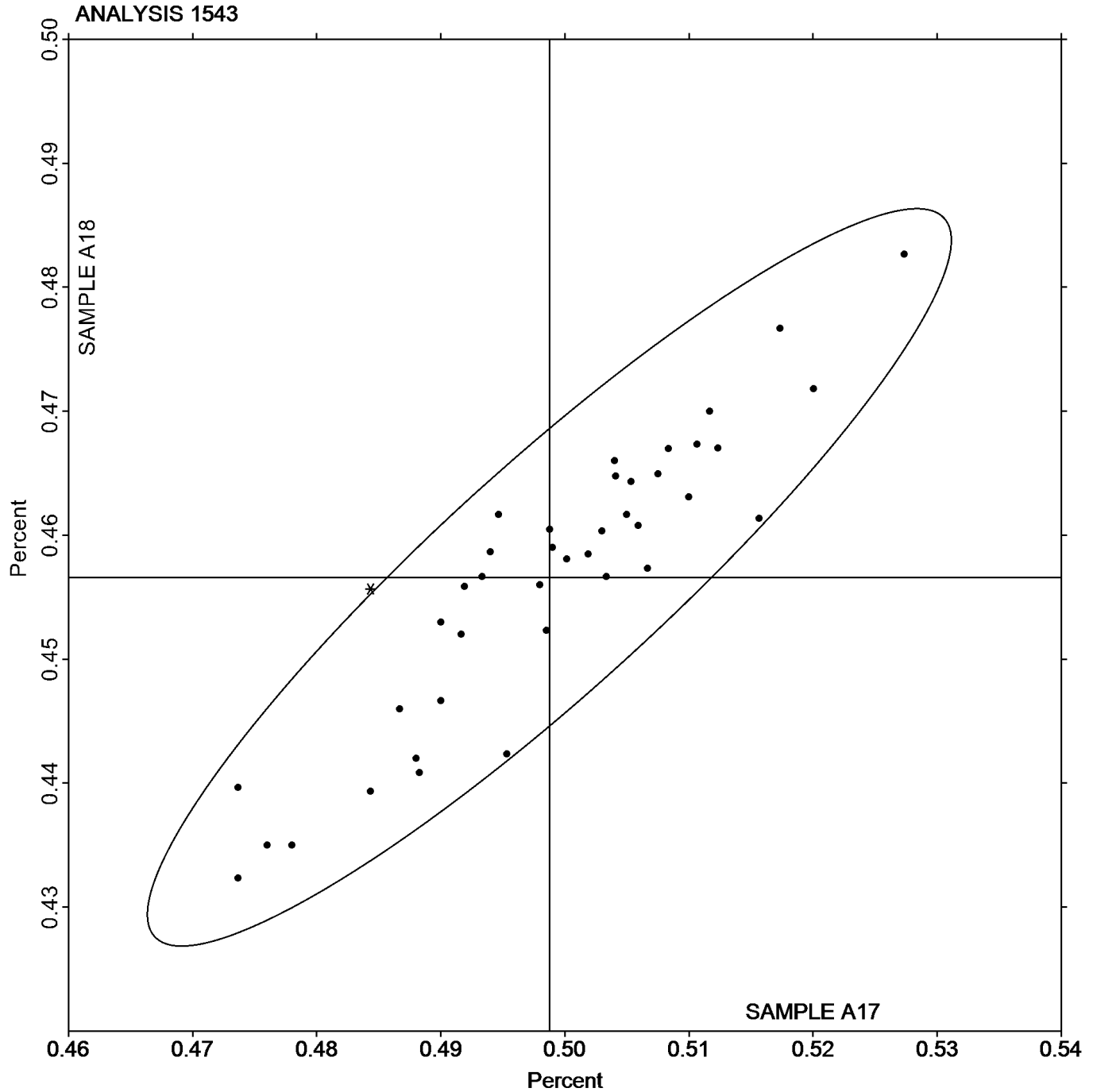
SILICON (Si)

SAMPLE A17

0.4987 Percent

SAMPLE A18

0.4566 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1544****Aluminum, MANGANESE (Mn)
MANGANESE (Mn)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.0335	0.0004	0.25	0.0676	-0.0003	-0.11	OE
2JC3QH		0.0321	-0.0010	-0.73	0.0618	-0.0061	-2.12	OE
3HK9NK		0.0337	0.0006	0.40	0.0680	0.0001	0.03	OE
6LEPEJ		0.0335	0.0004	0.30	0.0677	-0.0002	-0.07	XX
6NL8CF		0.0319	-0.0012	-0.87	0.0670	-0.0009	-0.32	OE
6TTK9R		0.0327	-0.0004	-0.32	0.0677	-0.0003	-0.09	OE
98JPT9		0.0335	0.0004	0.30	0.0688	0.0009	0.30	OE
9AMKDB		0.0322	-0.0009	-0.66	0.0655	-0.0025	-0.85	OE
9ZHDXB		0.0332	0.0001	0.06	0.0658	-0.0022	-0.75	OE
B4RGMP		0.0318	-0.0013	-0.96	0.0629	-0.0050	-1.74	OE
B6CYYB	X	0.0451	0.0120	8.56	0.0603	-0.0076	-2.62	IC
C2ZRQE	*	0.0362	0.0031	2.24	0.0760	0.0081	2.79	OE
C87LKB		0.0325	-0.0006	-0.46	0.0680	0.0001	0.03	OE
CEB64A		0.0328	-0.0003	-0.22	0.0680	0.0001	0.03	IC
CUGR7V		0.0356	0.0025	1.81	0.0728	0.0048	1.67	OE
DVRQ3Q		0.0322	-0.0009	-0.65	0.0672	-0.0007	-0.24	OE
EFAFR9		0.0330	-0.0001	-0.08	0.0680	0.0001	0.03	OE
EN9VLM		0.0351	0.0020	1.40	0.0676	-0.0003	-0.11	OE
FEYTZL		0.0315	-0.0016	-1.13	0.0659	-0.0021	-0.71	IC
FV7WFL		0.0330	-0.0001	-0.08	0.0690	0.0011	0.37	XX
GU3XAH		0.0325	-0.0006	-0.46	0.0657	-0.0022	-0.77	OE
HXKBM6		0.0320	-0.0011	-0.80	0.0670	-0.0009	-0.32	IC
JCYXKE		0.0320	-0.0011	-0.80	0.0660	-0.0019	-0.66	OE
K8HTLJ		0.0350	0.0019	1.33	0.0669	-0.0010	-0.34	OE
KCT4CT		0.0310	-0.0021	-1.51	0.0637	-0.0043	-1.47	IC
KE28BB		0.0342	0.0011	0.78	0.0700	0.0021	0.72	OE
LBWZ9A	*	0.0364	0.0033	2.36	0.0760	0.0081	2.79	OE
LWGRKY		0.0341	0.0010	0.73	0.0683	0.0004	0.14	OE
MREFVD	X	0.0417	0.0086	6.13	0.0600	-0.0079	-2.74	OE
N63RVU		0.0314	-0.0017	-1.20	0.0667	-0.0013	-0.43	OE
NAEQ99		0.0327	-0.0004	-0.32	0.0714	0.0035	1.21	OE
PHJ88R		0.0320	-0.0011	-0.82	0.0665	-0.0015	-0.50	OE
PXVKNP		0.0335	0.0004	0.28	0.0705	0.0026	0.89	OE
Q4L982		0.0334	0.0003	0.23	0.0690	0.0011	0.37	XX
QXB49M		0.0304	-0.0027	-1.94	0.0659	-0.0021	-0.71	OE
RZZPG4		0.0318	-0.0013	-0.96	0.0667	-0.0012	-0.42	OE
TMAFAP		0.0322	-0.0009	-0.67	0.0670	-0.0009	-0.31	OE
TTCFTR		0.0338	0.0007	0.52	0.0710	0.0031	1.06	OE
UKCNC9		0.0340	0.0009	0.64	0.0675	-0.0004	-0.15	OE
ZJHXWJ		0.0350	0.0019	1.33	0.0709	0.0030	1.04	OE
ZXXV2J		0.0341	0.0010	0.68	0.0671	-0.0008	-0.28	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 154

Analysis 1544

2nd Qtr

Aluminum, MANGANESE (Mn)
MANGANESE (Mn)

2026

Summary Statistics

	<u>Sample A17</u>		<u>Sample A18</u>	
Grand Means	0.0331	Percent	0.0679	Percent
Std Dev Btwn Labs	0.0014	Percent	0.0029	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 39 of 41 reporting participants

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1544

B6CYYB (X) - Data for sample A17 are high. Inconsistent within the determinations of both samples.

MREFVD (X) - Data for sample A17 are high and data for sample A18 are low.



Analysis 1544

2nd Qtr

Aluminum, MANGANESE (Mn)

2026

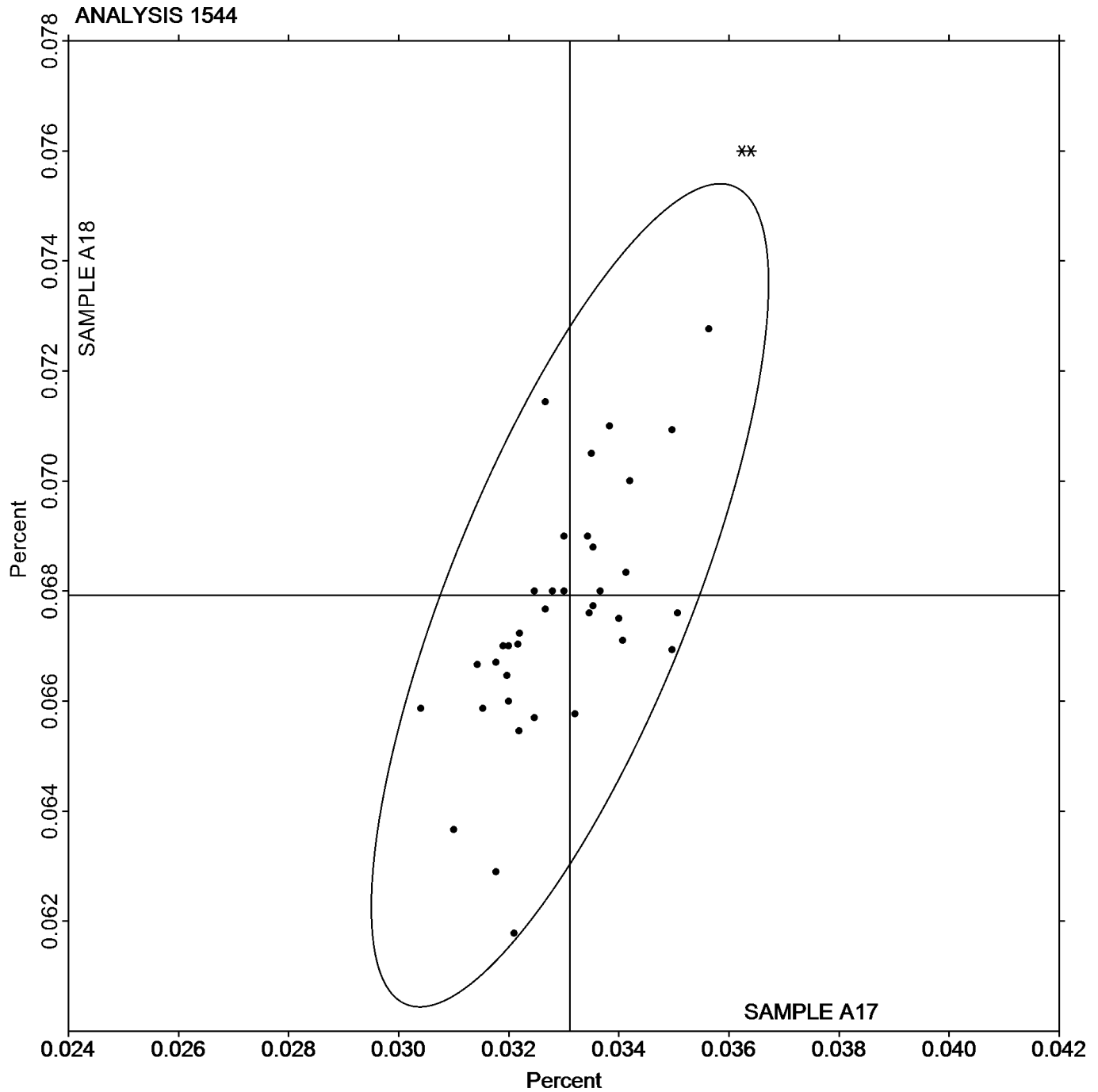
MANGANESE (Mn)

SAMPLE A17

SAMPLE A18

0.0331 Percent

0.0679 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1545****Aluminum, MAGNESIUM (Mg)
MAGNESIUM (Mg)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.5368	-0.0114	-0.61	0.4319	-0.0063	-0.38	OE
2JC3QH		0.5477	-0.0006	-0.03	0.4369	-0.0013	-0.08	OE
3HK9NK		0.5700	0.0218	1.15	0.4467	0.0084	0.51	OE
6LEPEJ		0.5753	0.0271	1.43	0.4560	0.0178	1.08	XX
6NL8CF		0.5090	-0.0392	-2.08	0.4037	-0.0346	-2.10	OE
6TTK9R		0.5417	-0.0066	-0.35	0.4283	-0.0099	-0.60	OE
98JPT9		0.5480	-0.0002	-0.01	0.4350	-0.0032	-0.20	OE
9AMKDB		0.5215	-0.0268	-1.42	0.4140	-0.0243	-1.47	OE
9ZHDXB		0.5595	0.0113	0.60	0.4528	0.0145	0.88	OE
B4RGMP		0.5541	0.0058	0.31	0.4492	0.0110	0.67	OE
B6CYYB	X	0.5260	-0.0222	-1.18	0.4940	0.0558	3.39	IC
C2ZRQE		0.5477	-0.0006	-0.03	0.4340	-0.0042	-0.26	OE
C87LKB		0.5510	0.0028	0.15	0.4380	-0.0002	-0.01	OE
CEB64A		0.5557	0.0074	0.39	0.4447	0.0064	0.39	IC
CUGR7V		0.5733	0.0251	1.33	0.4688	0.0306	1.86	OE
DVRQ3Q		0.5549	0.0067	0.35	0.4440	0.0057	0.35	OE
EFAFR9		0.5500	0.0018	0.09	0.4367	-0.0016	-0.10	OE
EN9VLM		0.5320	-0.0162	-0.86	0.4233	-0.0149	-0.90	OE
FEYTZL		0.5169	-0.0313	-1.66	0.4198	-0.0184	-1.12	IC
GU3XAH		0.5387	-0.0096	-0.51	0.4277	-0.0106	-0.64	OE
HXKBM6		0.5190	-0.0292	-1.55	0.4220	-0.0162	-0.99	IC
JCYXKE		0.5623	0.0141	0.75	0.4447	0.0064	0.39	OE
K8HTLJ		0.5653	0.0171	0.91	0.4617	0.0234	1.42	OE
KCT4CT		0.5580	0.0098	0.52	0.4350	-0.0032	-0.20	IC
KE28BB		0.5670	0.0188	0.99	0.4460	0.0078	0.47	OE
LBWZ9A		0.5460	-0.0022	-0.12	0.4370	-0.0012	-0.07	OE
LWGRKY		0.5547	0.0064	0.34	0.4533	0.0151	0.92	OE
MREFVD		0.5700	0.0218	1.15	0.4683	0.0301	1.83	OE
N63RVU		0.5570	0.0088	0.46	0.4393	0.0011	0.07	OE
NAEQ99		0.5465	-0.0017	-0.09	0.4327	-0.0055	-0.33	OE
PHJ88R		0.5133	-0.0349	-1.85	0.4100	-0.0282	-1.71	OE
PXVKNP		0.5530	0.0048	0.25	0.4440	0.0058	0.35	OE
Q4L982		0.5570	0.0088	0.46	0.4473	0.0091	0.55	XX
QXB49M		0.5680	0.0198	1.05	0.4541	0.0159	0.97	OE
RZZPG4	*	0.4930	-0.0552	-2.92	0.3913	-0.0469	-2.85	OE
TMAFAP		0.5483	0.0001	0.01	0.4346	-0.0036	-0.22	OE
TTCFTR		0.5537	0.0054	0.29	0.4553	0.0171	1.04	OE
UKCNC9		0.5680	0.0198	1.05	0.4465	0.0083	0.50	OE
ZJHXWJ		0.5560	0.0078	0.41	0.4459	0.0077	0.47	OE
ZXXV2J		0.5412	-0.0070	-0.37	0.4305	-0.0077	-0.47	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 154

Analysis 1545

2nd Qtr

Aluminum, MAGNESIUM (Mg)

2026

MAGNESIUM (Mg)

Summary Statistics

	<u>Sample A17</u>		<u>Sample A18</u>	
Grand Means	0.5482	Percent	0.4382	Percent
Stnd Dev Btwn Labs	0.0189	Percent	0.0165	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 39 of 40 reporting participants

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1545

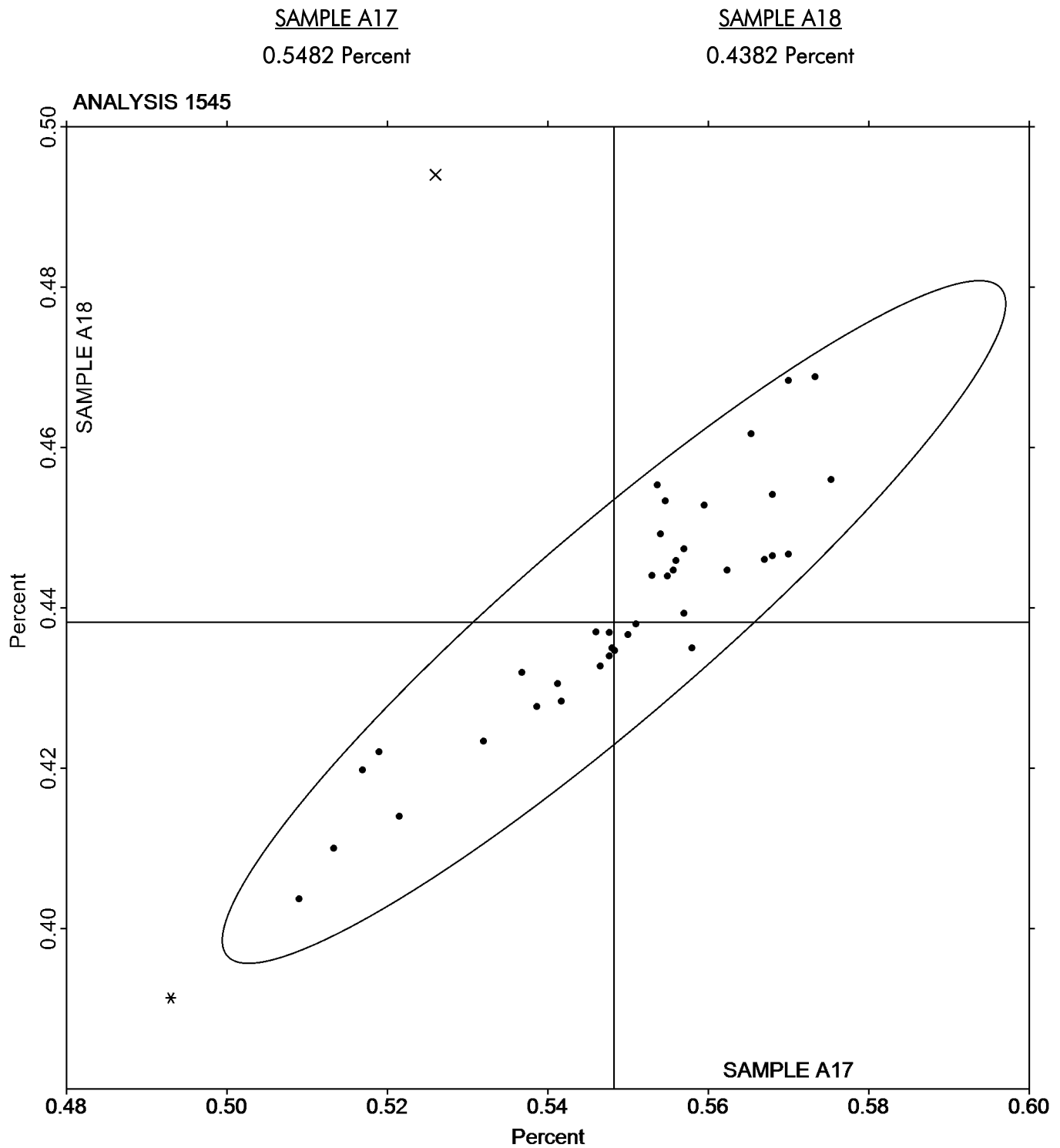
B6CYYB (X) - Data for sample A18 are high. Inconsistent within the determinations of sample A17.



Analysis 1545

2nd Qtr
2026

Aluminum, MAGNESIUM (Mg)
MAGNESIUM (Mg)



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1546****Aluminum, CHROMIUM (Cr)
CHROMIUM (Cr)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.00323	-0.00018	-0.68	0.00977	-0.0003	-0.61	OE
2JC3QH		0.00351	0.00010	0.37	0.00963	-0.0004	-0.92	OE
3HK9NK		0.00300	-0.00041	-1.57	0.0100	0.0000	-0.07	OE
6LEPEJ		0.00337	-0.00005	-0.17	0.00997	-0.0001	-0.15	XX
6NL8CF	*	0.00383	0.00042	1.60	0.0112	0.0012	2.76	OE
6TTK9R	X	0.00297	-0.00045	-1.69	0.00490	-0.0051	-11.78	OE
98JPT9		0.00363	0.00022	0.84	0.00980	-0.0002	-0.53	OE
9AMKDB		0.00356	0.00015	0.56	0.00973	-0.0003	-0.69	OE
9ZHDXB		0.00367	0.00025	0.97	0.0109	0.0009	1.99	OE
B4RGMP		0.00317	-0.00025	-0.93	0.00933	-0.0007	-1.60	OE
B6CYYB	X	0.00670	0.00329	12.48	0.0102	0.0002	0.46	IC
C2ZRQE		0.00287	-0.00055	-2.07	0.0107	0.0007	1.54	OE
C87LKB		0.00323	-0.00018	-0.68	0.0101	0.0001	0.16	OE
CEB64A		0.00320	-0.00021	-0.81	0.00950	-0.0005	-1.22	IC
CUGR7V		0.00337	-0.00005	-0.17	0.0104	0.0003	0.77	OE
DVRQ3Q		0.00340	-0.00001	-0.05	0.00983	-0.0002	-0.45	OE
EFAFR9		0.00367	0.00025	0.97	0.0100	0.0000	-0.07	OE
EN9VLM	X	0.00100	-0.00241	-9.16	0.00413	-0.0059	-13.54	OE
FEYTZL		0.00370	0.00029	1.09	0.00977	-0.0003	-0.61	IC
FV7WFL	X	0.00100	-0.00241	-9.16	0.00833	-0.0017	-3.90	XX
GU3XAH		0.00367	0.00025	0.97	0.00977	-0.0003	-0.61	OE
JCYXKE		0.00333	-0.00008	-0.30	0.00987	-0.0002	-0.38	OE
K8HTLJ		0.00320	-0.00021	-0.81	0.0105	0.0005	1.15	OE
KCT4CT		0.00333	-0.00008	-0.30	0.0100	0.0000	-0.07	IC
KE28BB		0.00320	-0.00021	-0.81	0.0100	0.0000	-0.07	OE
LBWZ9A	M	No Data Reported			0.00960	-0.0004	-0.99	OE
LWGRKY		0.00340	-0.00001	-0.05	0.00927	-0.0008	-1.75	OE
MREFVD		0.00300	-0.00041	-1.57	0.0100	0.0000	-0.07	OE
N63RVU		0.00357	0.00015	0.59	0.00997	-0.0001	-0.15	OE
NAEQ99		0.00340	-0.00001	-0.05	0.00973	-0.0003	-0.68	OE
PHJ88R		0.00363	0.00022	0.84	0.0107	0.0007	1.61	OE
Q4L982	X	0.0334	0.03002	113.97	0.0690	0.0590	135.37	XX
QXB49M		0.00340	-0.00001	-0.05	0.00983	-0.0002	-0.45	OE
RZZPG4		0.00367	0.00025	0.97	0.0107	0.0007	1.54	OE
TMAFAP		0.00354	0.00012	0.47	0.00999	0.0000	-0.09	OE
TTCFTR		0.00330	-0.00011	-0.43	0.00987	-0.0002	-0.38	OE
UKCNC9		0.00300	-0.00041	-1.57	0.0100	0.0000	-0.07	OE
ZJHXWJ		0.00407	0.00065	2.48	0.0101	0.0001	0.23	OE
ZXXV2J		0.00350	0.00009	0.33	0.0100	0.0000	-0.07	OE

Summary Statistics

Sample A17				Sample A18	
Grand Means	0.00341	Percent		0.0100	Percent
Std Dev Btwn Labs	0.00026	Percent		0.0004	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 33 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1546

Aluminum, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1546

6TTK9R (X) - Data for sample A18 are low.
B6CYYB (X) - Data for sample A17 are high. Inconsistent within the determinations of sample A17.
EN9VLM (X) - Data for both samples are low.
FV7WFL (X) - Data for both samples are low.
LBWZ9A (M) - Participant did not submit data for sample A17.
Q4L982 (X) - Data for both samples are high.

Analysis 1546

Aluminum, CHROMIUM (Cr)
CHROMIUM (Cr)

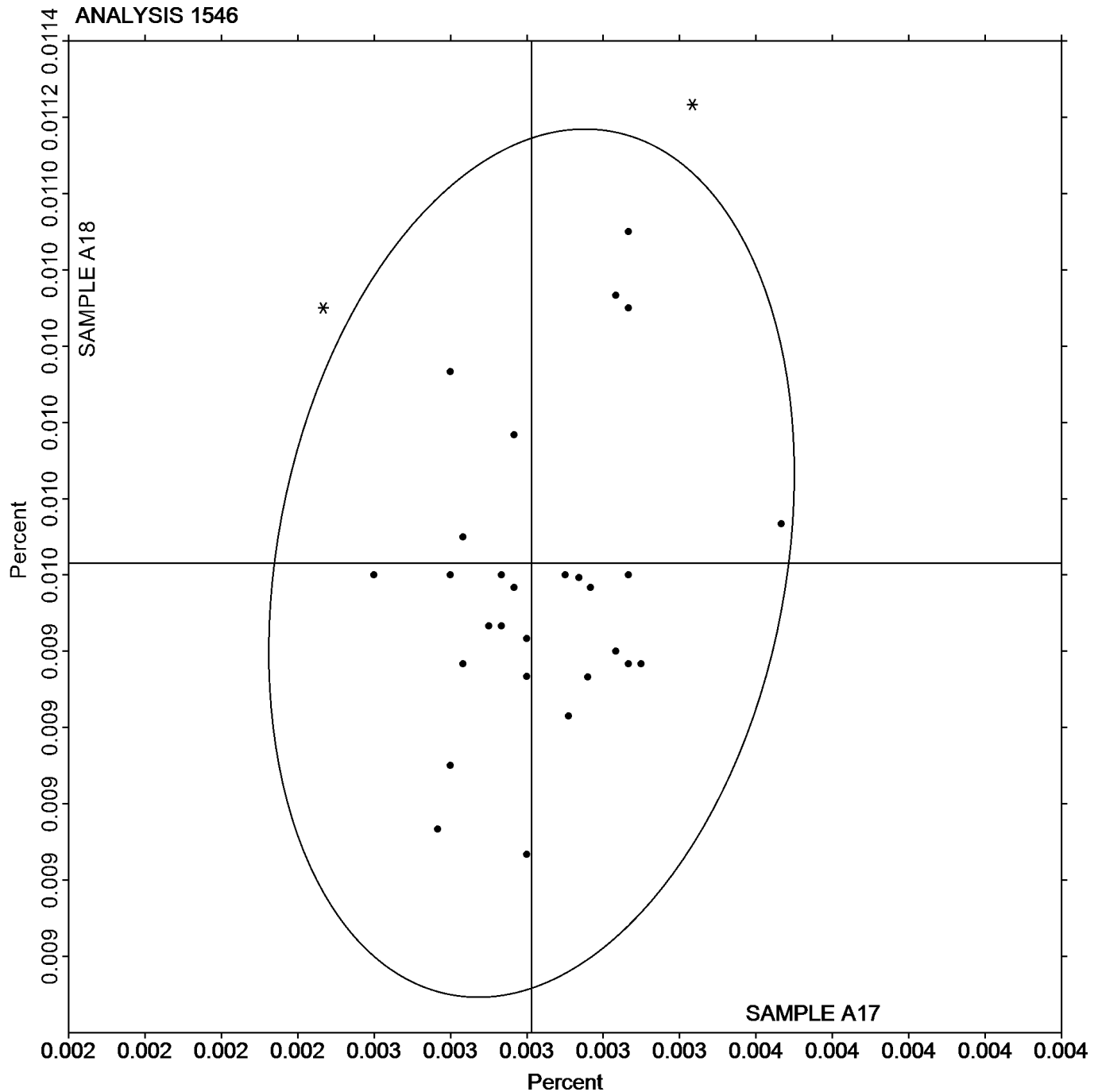
**2nd Qtr
2026**

SAMPLE A17

0.00341 Percent

SAMPLE A18

0.0100 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1547

Aluminum, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample A17			Sample A18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27PRBC		0.0109	-0.0003	-0.28	0.0162	-0.0005	-0.50	OE
2JC3QH		0.0110	-0.0002	-0.16	0.0166	-0.0001	-0.07	OE
3HK9NK		0.0110	-0.0002	-0.21	0.0163	-0.0004	-0.34	OE
6LEPEJ		0.0120	0.0008	0.89	0.0175	0.0008	0.76	XX
6NL8CF		0.0116	0.0004	0.47	0.0170	0.0003	0.29	OE
6TTK9R		0.0103	-0.0009	-0.92	0.0153	-0.0014	-1.29	OE
98JPT9		0.0118	0.0006	0.61	0.0173	0.0006	0.57	OE
9AMKDB		0.0113	0.0001	0.10	0.0167	0.0000	-0.03	OE
9ZHDXB		0.0119	0.0007	0.75	0.0184	0.0017	1.61	OE
B4RGMP		0.0115	0.0003	0.36	0.0172	0.0005	0.48	OE
B6CYYB	*	0.0135	0.0023	2.46	0.0159	-0.0008	-0.75	IC
C2ZRQE	X	0.0175	0.0063	6.77	0.0300	0.0133	12.58	OE
C87LKB		0.0111	-0.0001	-0.14	0.0169	0.0002	0.20	OE
CEB64A		0.0103	-0.0009	-0.96	0.0151	-0.0016	-1.51	IC
CUGR7V		0.0108	-0.0004	-0.42	0.0163	-0.0004	-0.40	OE
DVRQ3Q		0.0114	0.0002	0.25	0.0172	0.0005	0.45	OE
EFAFR9		0.0120	0.0008	0.86	0.0173	0.0006	0.61	OE
EN9VLM		0.0123	0.0011	1.22	0.0182	0.0015	1.39	XX
FEYTZL		0.0106	-0.0006	-0.60	0.0156	-0.0011	-1.00	IC
FV7WFL		0.0120	0.0008	0.86	0.0173	0.0006	0.61	XX
GU3XAH		0.0111	-0.0001	-0.14	0.0159	-0.0008	-0.75	OE
HXKBM6		0.0110	-0.0002	-0.21	0.0170	0.0003	0.29	IC
JCYXKE		0.0110	-0.0002	-0.21	0.0170	0.0003	0.29	OE
K8HTLJ	*	0.00830	-0.0029	-3.10	0.0133	-0.0034	-3.24	OE
KCT4CT		0.0110	-0.0002	-0.21	0.0160	-0.0007	-0.66	IC
KE28BB		0.0102	-0.0010	-1.07	0.0164	-0.0003	-0.28	OE
LBWZ9A		0.0126	0.0014	1.50	0.0183	0.0016	1.52	OE
LWGRKY		0.0118	0.0006	0.68	0.0174	0.0007	0.64	OE
MREFVD	*	0.0123	0.0011	1.22	0.0167	0.0000	-0.02	OE
N63RVU		0.0101	-0.0011	-1.14	0.0154	-0.0013	-1.25	XX
NAEQ99		0.0112	0.0000	0.00	0.0170	0.0003	0.26	OE
PHJ88R	*	0.0139	0.0027	2.93	0.0192	0.0025	2.34	OE
PXVKNP		0.0115	0.0003	0.32	0.0163	-0.0004	-0.37	OE
Q4L982		0.0116	0.0004	0.43	0.0178	0.0011	1.08	XX
QXB49M		0.0109	-0.0003	-0.35	0.0167	0.0000	-0.02	OE
RZZPG4	X	0.0140	0.0028	3.00	0.0170	0.0003	0.26	OE
TMAFAP		0.0116	0.0004	0.47	0.0174	0.0007	0.68	OE
TTCFTR		0.0105	-0.0007	-0.74	0.0161	-0.0006	-0.59	OE
UKCNC9		0.0100	-0.0012	-1.28	0.0160	-0.0007	-0.66	OE
ZJHXWJ		0.0106	-0.0006	-0.67	0.0159	-0.0008	-0.78	OE
ZXXV2J		0.0102	-0.0010	-1.10	0.0164	-0.0003	-0.31	OE



Fasteners and Metals Interlaboratory Testing Program
Analysis 1547
Aluminum, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 154
2nd Qtr
2026

Summary Statistics

	<u>Sample A17</u>		<u>Sample A18</u>	
Grand Means	0.0112	Percent	0.0167	Percent
Stnd Dev Btwn Labs	0.0009	Percent	0.0011	Percent

Samples A17, A18 : AA6060, AA6060

Statistics based on 38 of 41 reporting participants

Key to Method Codes Reported by Participants

IC Spectrometry - Inductively Coupled Plasma (ICP) OE Spectrometry - Optical Emission (OES)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1547

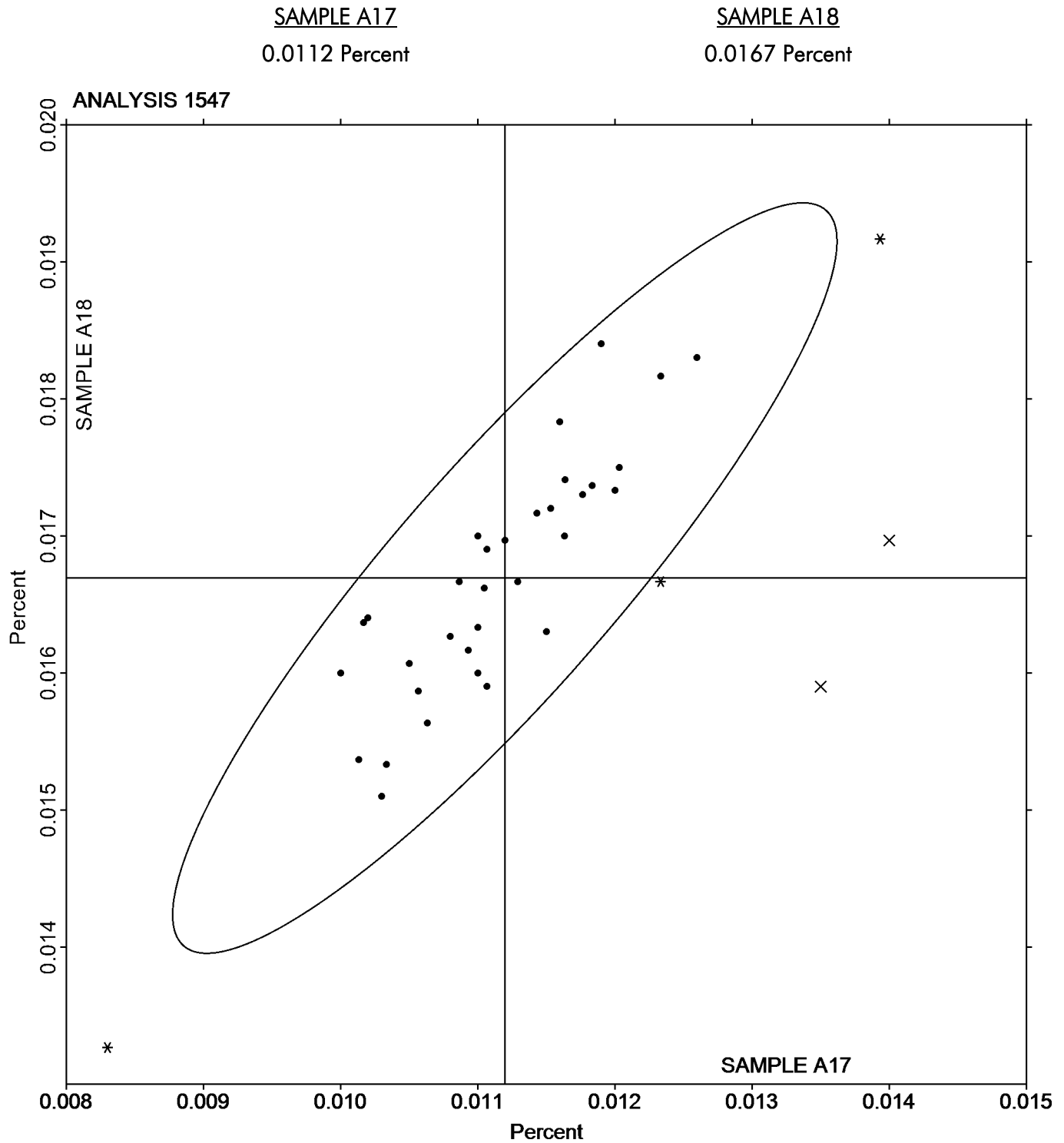
C2ZRQE (X) - Data for both samples are high. Possible Systematic Error.
RZZPG4 (X) - Data for sample A17 are high.



Analysis 1547

2nd Qtr
2026

Aluminum, TITANIUM (Ti)
TITANIUM (Ti)



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1640****Corrosion Resistant Steel, CARBON (C)
CARBON (C)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.0471	0.0007	0.23	0.0290	0.0050	2.21	OE
3WGMURU		0.0462	-0.0002	-0.06	0.0235	-0.0005	-0.20	XX
4HGVUW		0.0499	0.0035	1.14	0.0251	0.0012	0.53	CI
6KJ8CH		0.0390	-0.0074	-2.37	0.0203	-0.0036	-1.58	OE
6LEPEJ		0.0454	-0.0010	-0.31	0.0229	-0.0011	-0.47	XX
6NHUG7		0.0486	0.0022	0.70	0.0227	-0.0013	-0.55	OE
6NL8CF		0.0476	0.0012	0.39	0.0238	-0.0001	-0.04	OE
6TTK9R		0.0447	-0.0017	-0.55	0.0237	-0.0003	-0.11	OE
7DVTZW		0.0443	-0.0021	-0.66	0.0223	-0.0016	-0.70	CO
7P8FPM	X	0.0456	-0.0008	-0.25	0.2170	0.1931	84.67	OE
9R8C9E		0.0443	-0.0021	-0.67	0.0226	-0.0014	-0.60	CO
A8H2AL		0.0464	0.0000	0.01	0.0237	-0.0002	-0.10	CO
B6CYYB		0.0479	0.0015	0.50	0.0276	0.0037	1.62	CO
CJ4F2E		0.0467	0.0003	0.09	0.0220	-0.0019	-0.85	GD
D6EPRA		0.0455	-0.0009	-0.30	0.0229	-0.0010	-0.45	CI
EFAFR9	*	0.0513	0.0049	1.59	0.0303	0.0064	2.81	OE
F9QCK7	*	0.0543	0.0079	2.55	0.0300	0.0061	2.66	OE
FA49L4		0.0468	0.0004	0.13	0.0232	-0.0007	-0.30	CI
FGZ2X4		0.0515	0.0051	1.63	0.0274	0.0035	1.53	GD
G7HGE8		0.0454	-0.0010	-0.32	0.0250	0.0011	0.48	CI
GM9HDK		0.0513	0.0049	1.59	0.0253	0.0014	0.60	CO
H26B2Y		0.0466	0.0002	0.08	0.0230	-0.0009	-0.41	CI
HZ8RA6		0.0433	-0.0031	-1.00	0.0220	-0.0019	-0.85	XX
HZQMZ8		0.0477	0.0013	0.43	0.0255	0.0015	0.67	XX
J44TTY		0.0393	-0.0071	-2.27	0.0219	-0.0020	-0.87	XX
JAAPCY		0.0460	-0.0004	-0.12	0.0233	-0.0006	-0.26	OE
JTLENB		0.0443	-0.0021	-0.66	0.0217	-0.0023	-0.99	OE
KE28BB		0.0470	0.0006	0.20	0.0250	0.0011	0.47	OE
KUB9PY		0.0473	0.0009	0.30	0.0273	0.0034	1.49	OE
L4WM3E		0.0417	-0.0047	-1.52	0.0207	-0.0033	-1.43	OE
L7NJTU		0.0445	-0.0019	-0.62	0.0251	0.0012	0.51	OE
LBWZ9A		0.0500	0.0036	1.16	0.0234	-0.0005	-0.23	OE
LVL9HX		0.0467	0.0003	0.10	0.0227	-0.0012	-0.54	XX
LWGRKY		0.0431	-0.0033	-1.06	0.0208	-0.0032	-1.39	CO
MP8XWG		0.0457	-0.0007	-0.23	0.0230	-0.0009	-0.41	CI
MREFVD		0.0463	-0.0001	-0.04	0.0235	-0.0004	-0.17	CO
MU4PYC		0.0466	0.0002	0.07	0.0232	-0.0008	-0.33	OE
MWAXFJ	X	0.0709	0.0245	7.86	0.0227	-0.0012	-0.54	OE
N47ATR		0.0452	-0.0012	-0.38	0.0226	-0.0013	-0.58	CO
P2EQ97		0.0503	0.0039	1.26	0.0266	0.0027	1.17	OE
QGZPJC		0.0465	0.0001	0.03	0.0225	-0.0014	-0.62	CI
QXB49M		0.0484	0.0020	0.65	0.0240	0.0000	0.02	OE
QXJWB6		0.0461	-0.0003	-0.08	0.0231	-0.0008	-0.36	CI
RKG9DU		0.0501	0.0037	1.20	0.0209	-0.0030	-1.31	OE
TTCFTR		0.0464	0.0000	0.00	0.0239	0.0000	-0.01	OE
UTQBPJ		0.0469	0.0005	0.17	0.0250	0.0011	0.48	OE
UWRA84		0.0397	-0.0067	-2.16	0.0222	-0.0017	-0.76	OE

**Fasteners and Metals Interlaboratory Testing Program****Analysis 1640****Corrosion Resistant Steel, CARBON (C)
CARBON (C)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YN2FW2		0.0480	0.0016	0.52	0.0237	-0.0002	-0.10	OE
YWXBWL		0.0422	-0.0042	-1.33	0.0246	0.0007	0.31	OE

Summary Statistics

Sample M17				Sample M18	
Grand Means	0.0464	Percent		0.0239	Percent
Std Dev Btwn Labs	0.0031	Percent		0.0023	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 47 of 49 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1640

7P8FPM (X) - Data for sample M18 appear to be off by a factor of ten.

MWAXFJ (X) - Data for sample M17 are high.

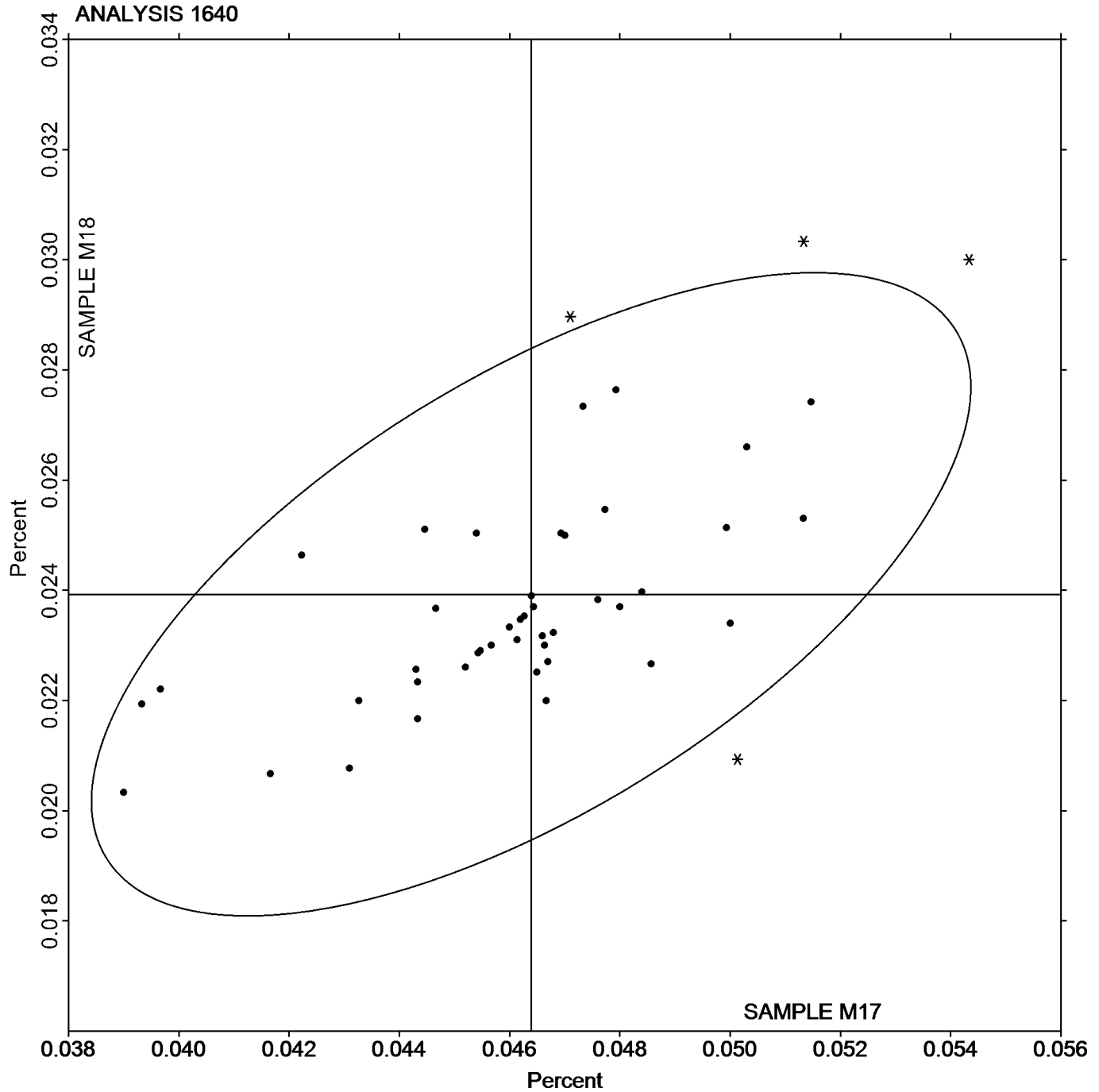


SAMPLE M17

0.0464 Percent

SAMPLE M18

0.0239 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1641****Corrosion Resistant Steel, MANGANESE (Mn)
MANGANESE (Mn)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		1.450	-0.007	-0.28	1.573	-0.014	-0.56	OE
3WGMRU		1.473	0.016	0.59	1.605	0.018	0.73	IC
4HGVUW		1.494	0.036	1.36	1.625	0.038	1.53	IC
6KJ8CH		1.464	0.007	0.25	1.598	0.010	0.42	OE
6LEPEJ		1.457	-0.001	-0.03	1.587	-0.001	-0.02	XX
6NHUG7		1.500	0.043	1.60	1.620	0.033	1.33	OE
6NL8CF		1.427	-0.031	-1.15	1.577	-0.011	-0.43	OE
6TTK9R		1.426	-0.032	-1.19	1.537	-0.051	-2.04	OE
7DVTZW		1.474	0.017	0.62	1.607	0.020	0.81	IC
7P8FPM		1.492	0.034	1.29	1.619	0.031	1.27	OE
A8H2AL		1.430	-0.027	-1.03	1.553	-0.034	-1.37	IC
B6CYYB		1.513	0.056	2.10	1.641	0.054	2.18	IC
CJ4F2E		1.510	0.053	1.97	1.597	0.009	0.38	GD
D6EPRA		1.415	-0.043	-1.60	1.537	-0.051	-2.04	WD
EFAFR9		1.450	-0.007	-0.28	1.590	0.003	0.11	OE
F9QCK7		1.470	0.013	0.47	1.607	0.019	0.79	OE
FA49L4		1.439	-0.019	-0.70	1.570	-0.018	-0.71	WD
FGZ2X4		1.432	-0.025	-0.94	1.579	-0.008	-0.32	GD
G7HGE8		1.442	-0.015	-0.58	1.577	-0.010	-0.41	WD
GM9HDK	X	1.377	-0.081	-3.03	1.489	-0.098	-3.96	IC
H26B2Y		1.452	-0.005	-0.19	1.588	0.001	0.05	WD
HZ8RA6		1.454	-0.004	-0.13	1.585	-0.002	-0.07	XX
HZQMZ8	*	1.383	-0.075	-2.80	1.527	-0.060	-2.43	XX
J44TTY		1.480	0.023	0.85	1.583	-0.004	-0.16	XX
JAAPCY		1.447	-0.011	-0.40	1.570	-0.017	-0.69	OE
JTLENB		1.460	0.003	0.10	1.597	0.009	0.38	WD
KE28BB		1.452	-0.005	-0.20	1.585	-0.002	-0.09	OE
KUB9PY	X	1.427	-0.031	-1.15	1.499	-0.089	-3.58	OE
L4WM3E		1.499	0.042	1.56	1.586	-0.002	-0.06	OE
L7NJTU		1.462	0.004	0.16	1.633	0.046	1.87	OE
LBWZ9A		1.440	-0.017	-0.65	1.560	-0.027	-1.10	OE
LVL9HX		1.444	-0.013	-0.49	1.574	-0.013	-0.53	XX
LWGRKY		1.452	-0.005	-0.19	1.584	-0.004	-0.14	IC
MP8XWG		1.472	0.015	0.55	1.600	0.013	0.52	WD
MREFVD		1.473	0.016	0.60	1.597	0.009	0.38	OE
MU4PYC		1.479	0.021	0.81	1.622	0.035	1.41	OE
MWAXFJ		1.430	-0.027	-1.03	1.560	-0.027	-1.10	OE
N47ATR		1.460	0.003	0.10	1.589	0.002	0.07	OE
P2EQ97	X	1.470	0.013	0.47	1.470	-0.117	-4.74	OE
QGZPJC		1.458	0.001	0.03	1.588	0.001	0.05	WD
QXB49M		1.497	0.040	1.49	1.626	0.039	1.58	OE
QXJWB6		1.450	-0.008	-0.29	1.567	-0.020	-0.82	WD
RKG9DU		1.430	-0.027	-1.03	1.587	-0.001	-0.02	OE
TTCFTR		1.461	0.004	0.15	1.583	-0.005	-0.18	OE
UTQBPJ		1.455	-0.002	-0.09	1.587	0.000	-0.01	WD
UWRA84	X	0.7427	-0.715	-26.81	0.8914	-0.696	-28.13	OE
YN2FW2		1.456	-0.002	-0.06	1.591	0.004	0.15	OE

**Fasteners and Metals Interlaboratory Testing Program****Cycle 154****Analysis 1641****2nd Qtr****Corrosion Resistant Steel, MANGANESE (Mn)
MANGANESE (Mn)****2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YWXBWL		1.423	-0.034	-1.28	1.570	-0.017	-0.69	OE

Summary Statistics

	Sample M17		Sample M18	
	Grand Means	Percent	Grand Means	Percent
	1.457		1.587	
Std Dev Btwn Labs	0.027	Percent	0.025	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 44 of 48 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1641

GM9HDK (X) - Data for both samples are low. Possible Systematic Error.

KUB9PY (X) - Data for sample M18 are low. Inconsistent within the determinations of sample M18.

P2EQ97 (X) - Data for sample M18 are low.

UWRA84 (X) - Data for both samples are low. Possible Systematic Error.



Analysis 1641

Corrosion Resistant Steel, MANGANESE (Mn)

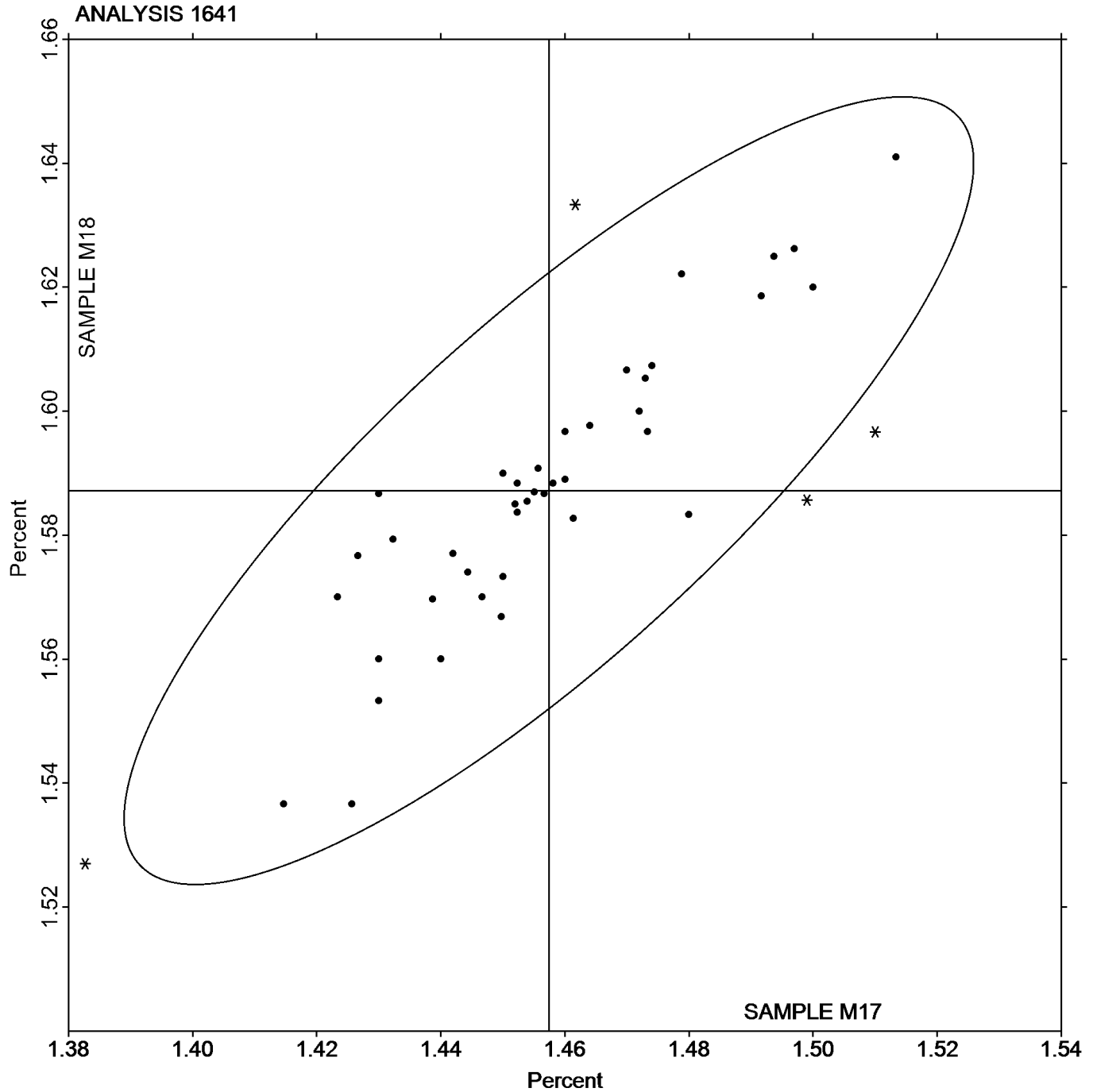
MANGANESE (Mn)

SAMPLE M17

SAMPLE M18

1.457 Percent

1.587 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.0325	0.0037	1.70	0.0313	0.0018	0.80	OE
3WGMRU		0.0278	-0.0011	-0.50	0.0288	-0.0007	-0.29	XX
4HGVUW		0.0278	-0.0010	-0.49	0.0287	-0.0007	-0.32	IC
6KJ8CH		0.0276	-0.0012	-0.58	0.0284	-0.0011	-0.48	OE
6LEPEJ		0.0290	0.0002	0.09	0.0297	0.0003	0.12	XX
6NHUG7		0.0278	-0.0010	-0.47	0.0270	-0.0024	-1.07	OE
6NL8CF		0.0278	-0.0011	-0.50	0.0283	-0.0011	-0.49	OE
6TTK9R		0.0280	-0.0008	-0.39	0.0297	0.0002	0.10	OE
7DVTZW		0.0307	0.0018	0.85	0.0310	0.0015	0.68	IC
7P8FPM		0.0324	0.0036	1.66	0.0326	0.0031	1.39	OE
B6CYYB	X	0.0176	-0.0113	-5.26	0.0193	-0.0102	-4.48	IC
CJ4F2E		0.0253	-0.0035	-1.64	0.0250	-0.0045	-1.96	GD
D6EPRA		0.0276	-0.0012	-0.57	0.0280	-0.0014	-0.63	WD
EFAFR9		0.0320	0.0032	1.47	0.0330	0.0035	1.57	OE
F9QCK7	*	0.0320	0.0032	1.47	0.0347	0.0052	2.30	OE
FA49L4		0.0300	0.0012	0.54	0.0300	0.0005	0.24	WD
FGZ2X4		0.0252	-0.0036	-1.70	0.0258	-0.0036	-1.60	GD
G7HGE8		0.0263	-0.0026	-1.20	0.0268	-0.0026	-1.15	WD
GM9HDK		0.0308	0.0020	0.93	0.0320	0.0026	1.14	IC
H26B2Y		0.0286	-0.0002	-0.11	0.0288	-0.0006	-0.27	WD
HZ8RA6		0.0270	-0.0018	-0.86	0.0272	-0.0023	-1.00	XX
HZQMZ8		0.0269	-0.0020	-0.92	0.0281	-0.0014	-0.61	XX
J44TTY	*	0.0327	0.0039	1.81	0.0281	-0.0013	-0.58	XX
JAAPCY		0.0297	0.0008	0.38	0.0303	0.0009	0.39	OE
JTLENB		0.0300	0.0012	0.54	0.0293	-0.0001	-0.05	WD
KE28BB		0.0283	-0.0005	-0.25	0.0286	-0.0009	-0.38	OE
KUB9PY		0.0340	0.0052	2.40	0.0353	0.0059	2.60	OE
L4WM3E		0.0267	-0.0022	-1.02	0.0270	-0.0025	-1.08	OE
L7NJTU		0.0293	0.0005	0.23	0.0307	0.0012	0.55	OE
LBWZ9A		0.0284	-0.0004	-0.21	0.0269	-0.0026	-1.13	OE
LVL9HX		0.0281	-0.0007	-0.35	0.0280	-0.0015	-0.64	XX
LWGRKY		0.0285	-0.0003	-0.15	0.0293	-0.0002	-0.07	IC
MP8XWG		0.0280	-0.0008	-0.39	0.0290	-0.0005	-0.20	WD
MREFVD		0.0307	0.0018	0.85	0.0307	0.0012	0.54	OE
MU4PYC		0.0294	0.0006	0.27	0.0300	0.0005	0.24	OE
MWAXFJ		0.0258	-0.0030	-1.40	0.0287	-0.0007	-0.32	OE
N47ATR		0.0286	-0.0002	-0.11	0.0283	-0.0012	-0.51	OE
P2EQ97		0.0263	-0.0025	-1.19	0.0275	-0.0020	-0.86	OE
QGZPJC		0.0294	0.0005	0.24	0.0303	0.0008	0.36	WD
QXB49M		0.0283	-0.0005	-0.24	0.0283	-0.0011	-0.49	OE
QXJWB6		0.0294	0.0006	0.27	0.0300	0.0005	0.24	WD
RKG9DU		0.0277	-0.0011	-0.53	0.0283	-0.0012	-0.52	OE
TTCFTR		0.0337	0.0049	2.26	0.0343	0.0048	2.14	OE
UTQBPJ	X	0.0263	-0.0025	-1.19	0.0302	0.0007	0.32	WD
UWRA84		0.0317	0.0029	1.35	0.0327	0.0032	1.42	OE
YN2FW2		0.0269	-0.0019	-0.91	0.0278	-0.0016	-0.71	OE
YWXBWL		0.0271	-0.0017	-0.80	0.0294	0.0000	-0.01	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

Cycle 154

2nd Qtr
2026

Summary Statistics

	<u>Sample M17</u>		<u>Sample M18</u>	
Grand Means	0.0288	Percent	0.0295	Percent
Std Dev Btwn Labs	0.0021	Percent	0.0023	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 44 of 47 reporting participants

Key to Method Codes Reported by Participants

GD Spectrometry - Glow Discharge (GDS) IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES) WD X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1642

B6CYYB (X) - Data for both samples are low. Possible Systematic Error.

UTQBPJ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample M17.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

Cycle 154

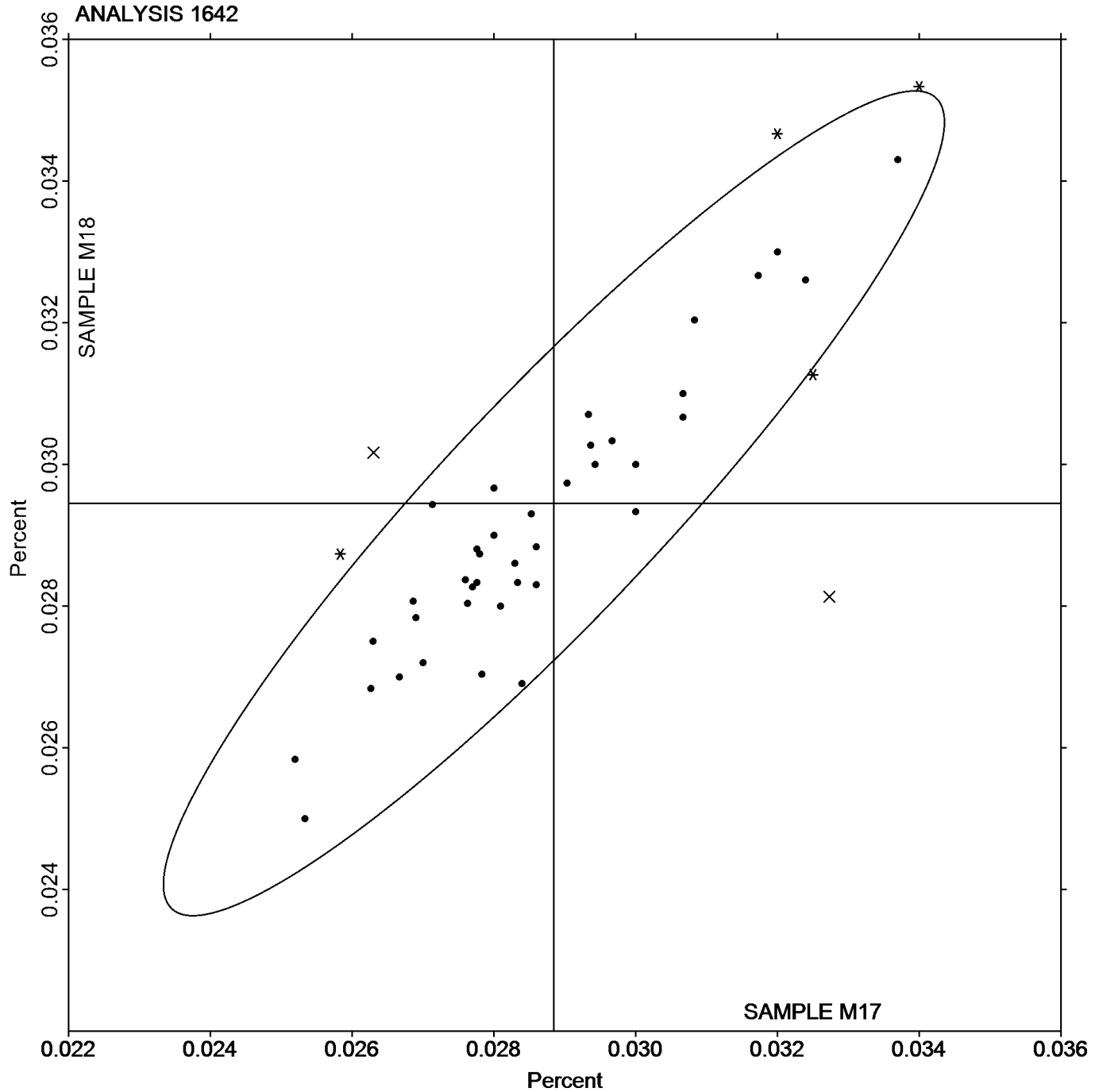
2nd Qtr
2026

SAMPLE M17

0.0288 Percent

SAMPLE M18

0.0295 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1643****Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.0313	0.0035	1.73	0.0308	0.0030	1.59	OE
3WGMURU		0.0289	0.0011	0.54	0.0277	-0.0001	-0.04	XX
4HGVUW		0.0271	-0.0007	-0.33	0.0258	-0.0019	-1.00	CI
6KJ8CH		0.0257	-0.0021	-1.04	0.0257	-0.0021	-1.07	OE
6LEPEJ		0.0283	0.0005	0.26	0.0287	0.0009	0.49	XX
6NHUG7		0.0261	-0.0017	-0.84	0.0268	-0.0010	-0.51	OE
6NL8CF		0.0253	-0.0025	-1.24	0.0278	0.0000	0.01	OE
6TTK9R		0.0257	-0.0021	-1.04	0.0273	-0.0004	-0.22	OE
7DVTZW		0.0262	-0.0015	-0.76	0.0261	-0.0017	-0.86	CO
7P8FPM		0.0262	-0.0016	-0.78	0.0254	-0.0024	-1.22	OE
9R8C9E		0.0312	0.0034	1.68	0.0306	0.0029	1.50	CO
A8H2AL		0.0311	0.0034	1.67	0.0313	0.0035	1.85	CO
B6CYYB	X	0.0347	0.0069	3.41	0.0354	0.0076	3.96	CO
CJ4F2E		0.0280	0.0002	0.12	0.0283	0.0006	0.30	GD
D6EPRA		0.0280	0.0002	0.12	0.0280	0.0002	0.13	CI
EFAFR9		0.0263	-0.0014	-0.71	0.0257	-0.0021	-1.08	OE
F9QCK7		0.0283	0.0006	0.28	0.0290	0.0012	0.65	OE
FA49L4		0.0256	-0.0022	-1.07	0.0255	-0.0023	-1.17	CI
FGZ2X4		0.0242	-0.0035	-1.75	0.0235	-0.0042	-2.19	GD
G7HGE8		0.0267	-0.0011	-0.53	0.0256	-0.0022	-1.12	CI
GM9HDK	*	0.0223	-0.0055	-2.71	0.0221	-0.0057	-2.94	CO
H26B2Y		0.0289	0.0011	0.56	0.0288	0.0010	0.53	CI
HZ8RA6		0.0282	0.0005	0.23	0.0280	0.0002	0.13	XX
HZQMZ8		0.0292	0.0014	0.69	0.0282	0.0004	0.22	XX
J44TTY	*	0.0319	0.0042	2.06	0.0260	-0.0018	-0.91	XX
JAAPCY		0.0287	0.0009	0.44	0.0287	0.0009	0.48	OE
JTLENB		0.0256	-0.0022	-1.09	0.0262	-0.0016	-0.83	WD
KE28BB		0.0269	-0.0009	-0.43	0.0267	-0.0011	-0.55	OE
KUB9PY		0.0263	-0.0014	-0.71	0.0277	-0.0001	-0.04	OE
L4WM3E		0.0307	0.0029	1.43	0.0310	0.0032	1.69	OE
L7NJTU	X	0.0342	0.0065	3.20	0.0380	0.0102	5.31	OE
LBWZ9A		0.0296	0.0018	0.91	0.0273	-0.0005	-0.23	OE
LVL9HX		0.0321	0.0043	2.13	0.0317	0.0039	2.05	XX
LWGRKY		0.0278	0.0000	0.02	0.0279	0.0001	0.06	CO
MP8XWG		0.0280	0.0002	0.12	0.0283	0.0006	0.30	CI
MREFVD		0.0278	0.0001	0.03	0.0279	0.0001	0.06	CO
MU4PYC		0.0243	-0.0035	-1.72	0.0266	-0.0012	-0.62	OE
MWAXFJ		0.0273	-0.0005	-0.25	0.0273	-0.0005	-0.25	OE
N47ATR		0.0286	0.0008	0.41	0.0279	0.0001	0.08	CO
P2EQ97		0.0278	0.0000	0.02	0.0283	0.0005	0.29	OE
QGZPJC		0.0291	0.0013	0.66	0.0290	0.0012	0.64	CI
QXB49M		0.0284	0.0006	0.30	0.0270	-0.0007	-0.37	OE
QXJWB6		0.0271	-0.0006	-0.31	0.0274	-0.0003	-0.16	CI
RKG9DU		0.0283	0.0005	0.25	0.0287	0.0009	0.48	OE
TTCFTR		0.0307	0.0029	1.43	0.0298	0.0021	1.08	OE
UTQBPJ		0.0275	-0.0003	-0.15	0.0275	-0.0002	-0.11	OE
UWRA84		0.0287	0.0010	0.48	0.0282	0.0004	0.23	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1643

Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)

Cycle 154

2nd Qtr

2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YN2FW2		0.0273	-0.0005	-0.23	0.0279	0.0001	0.08	OE
YWXBWL		0.0301	0.0024	1.17	0.0310	0.0032	1.67	OE

Summary Statistics

Sample M17				Sample M18			
Grand Means	0.0278	Percent		0.0278	Percent		
Std Dev Btwn Labs	0.0020	Percent		0.0019	Percent		

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 46 of 49 reporting participants

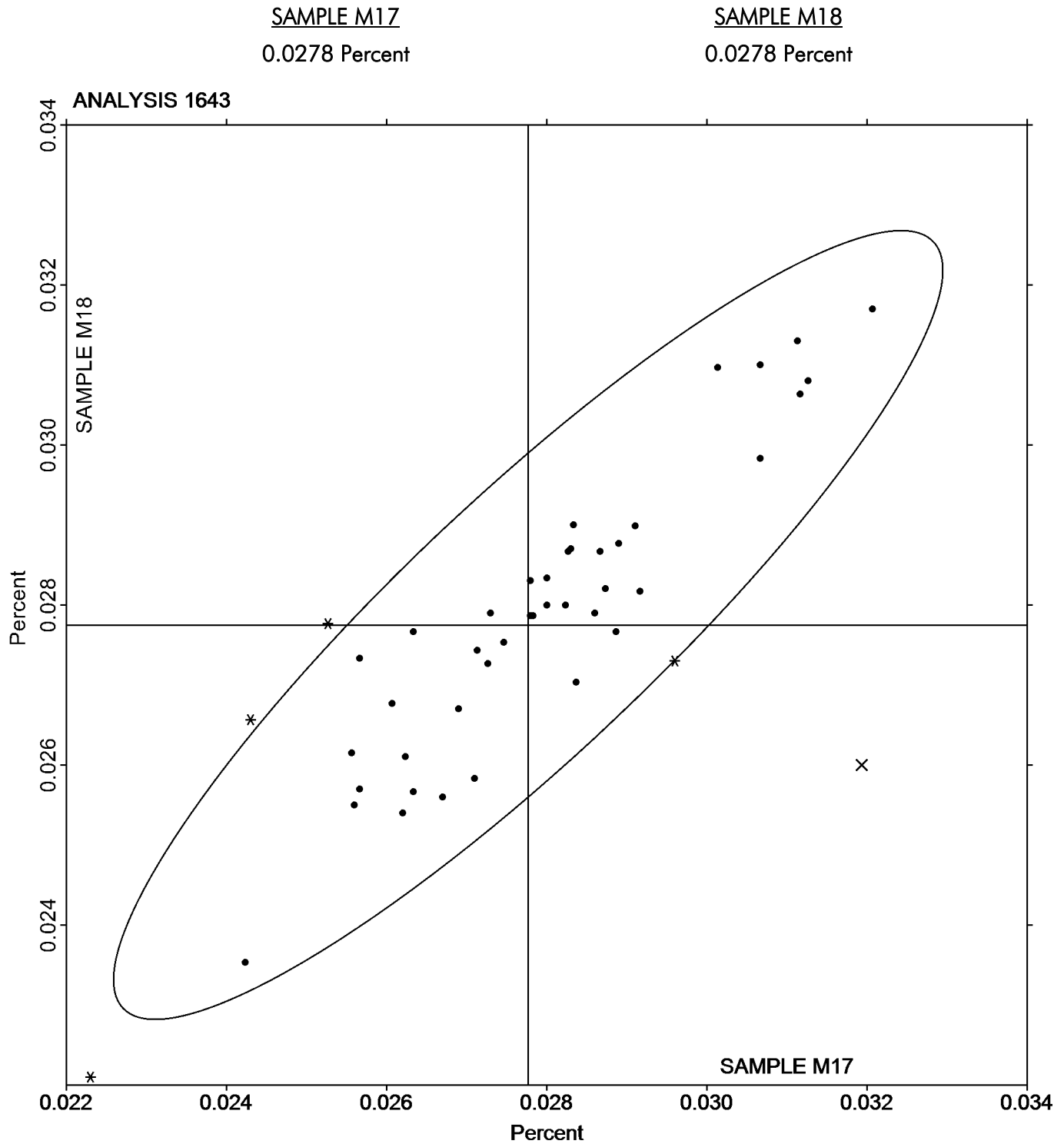
Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1643

B6CYYB (X) - Data for both samples are high. Possible Systematic Error.

L7NJTU (X) - Data for both samples are high. Possible Systematic Error.



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1644****Corrosion Resistant Steel, SILICON (Si)
SILICON (Si)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.5027	0.0000	0.00	0.5167	0.0016	0.13	OE
3WGMRU		0.4987	-0.0040	-0.37	0.5200	0.0049	0.40	XX
4HGVUW		0.5067	0.0040	0.38	0.5193	0.0043	0.35	IC
6KJ8CH		0.5130	0.0104	0.98	0.5287	0.0136	1.12	OE
6LEPEJ		0.5043	0.0017	0.16	0.5173	0.0023	0.19	XX
6NHUG7		0.4997	-0.0030	-0.28	0.5097	-0.0054	-0.44	OE
6NL8CF		0.4907	-0.0120	-1.13	0.5030	-0.0121	-0.99	OE
6TTK9R		0.5083	0.0057	0.54	0.5363	0.0213	1.75	OE
7DVTZW		0.5110	0.0084	0.79	0.5150	-0.0001	-0.01	IC
7P8FPM		0.5085	0.0059	0.55	0.5201	0.0050	0.41	OE
A8H2AL		0.4950	-0.0076	-0.72	0.4950	-0.0201	-1.65	IC
B6CYYB		0.5007	-0.0020	-0.18	0.5123	-0.0027	-0.22	IC
CJ4F2E		0.5157	0.0130	1.23	0.5460	0.0309	2.54	GD
D6EPRA		0.4937	-0.0090	-0.84	0.5027	-0.0124	-1.02	WD
EFAFR9		0.5133	0.0107	1.01	0.5333	0.0183	1.50	OE
F9QCK7		0.4800	-0.0226	-2.13	0.4867	-0.0284	-2.33	OE
FA49L4		0.5017	-0.0010	-0.09	0.5113	-0.0037	-0.31	WD
FGZ2X4		0.5229	0.0203	1.91	0.5307	0.0156	1.28	GD
G7HGE8		0.4980	-0.0047	-0.44	0.5122	-0.0028	-0.23	WD
GM9HDK	X	0.5033	0.0007	0.07	0.4397	-0.0754	-6.19	IC
H26B2Y		0.4990	-0.0036	-0.34	0.5103	-0.0047	-0.39	WD
HZQMZ8		0.4953	-0.0074	-0.69	0.5079	-0.0072	-0.59	XX
J44TTY		0.5043	0.0017	0.16	0.5050	-0.0101	-0.83	XX
JAAPCY		0.4947	-0.0080	-0.75	0.5043	-0.0107	-0.88	OE
JTLENB		0.4833	-0.0193	-1.82	0.4900	-0.0251	-2.06	WD
KE28BB		0.4980	-0.0046	-0.44	0.5190	0.0039	0.32	OE
KUB9PY		0.5107	0.0080	0.76	0.5260	0.0109	0.90	OE
L4WM3E		0.5103	0.0077	0.73	0.5200	0.0049	0.40	OE
L7NJTU		0.4955	-0.0071	-0.67	0.5100	-0.0051	-0.42	OE
LBWZ9A		0.5090	0.0064	0.60	0.5190	0.0039	0.32	OE
LVL9HX		0.5067	0.0040	0.38	0.5197	0.0046	0.38	XX
LWGRKY		0.4963	-0.0063	-0.59	0.5117	-0.0034	-0.28	XX
MP8XWG		0.5013	-0.0013	-0.12	0.5120	-0.0031	-0.25	WD
MREFVD		0.4967	-0.0060	-0.56	0.5107	-0.0044	-0.36	OE
MU4PYC		0.5123	0.0096	0.91	0.5212	0.0061	0.50	OE
MWAXFJ		0.5093	0.0067	0.63	0.5187	0.0036	0.30	OE
N47ATR		0.5150	0.0124	1.17	0.5240	0.0089	0.73	OE
P2EQ97		0.4900	-0.0126	-1.19	0.5060	-0.0091	-0.74	XX
QGZPJC		0.4891	-0.0135	-1.27	0.5048	-0.0102	-0.84	WD
QXB49M		0.5095	0.0068	0.65	0.5202	0.0052	0.42	OE
QXJWB6		0.5053	0.0026	0.25	0.5147	-0.0003	-0.03	WD
RKG9DU		0.4790	-0.0236	-2.23	0.4913	-0.0237	-1.95	OE
TTCFTR		0.4877	-0.0150	-1.41	0.5143	-0.0007	-0.06	OE
UTQBPJ		0.5108	0.0082	0.77	0.5218	0.0068	0.56	WD
UWRA84		0.5228	0.0202	1.90	0.5204	0.0053	0.43	OE
YN2FW2	X	0.5452	0.0425	4.01	0.5565	0.0415	3.40	OE
YWXBWL		0.5217	0.0190	1.80	0.5387	0.0236	1.94	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1644

Corrosion Resistant Steel, SILICON (Si)
SILICON (Si)

Cycle 154

2nd Qtr
2026

Summary Statistics

	<u>Sample M17</u>		<u>Sample M18</u>	
Grand Means	0.5026	Percent	0.5151	Percent
Std Dev Btwn Labs	0.0106	Percent	0.0122	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 45 of 47 reporting participants

Key to Method Codes Reported by Participants

GD Spectrometry - Glow Discharge (GDS) IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES) WD X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1644

GM9HDK (X) - Data for sample M18 are low. Inconsistent within the determinations of sample M18.

YN2FW2 (X) - Data for both samples are high. Possible Systematic Error.



Analysis 1644

2nd Qtr

Corrosion Resistant Steel, SILICON (Si)

2026

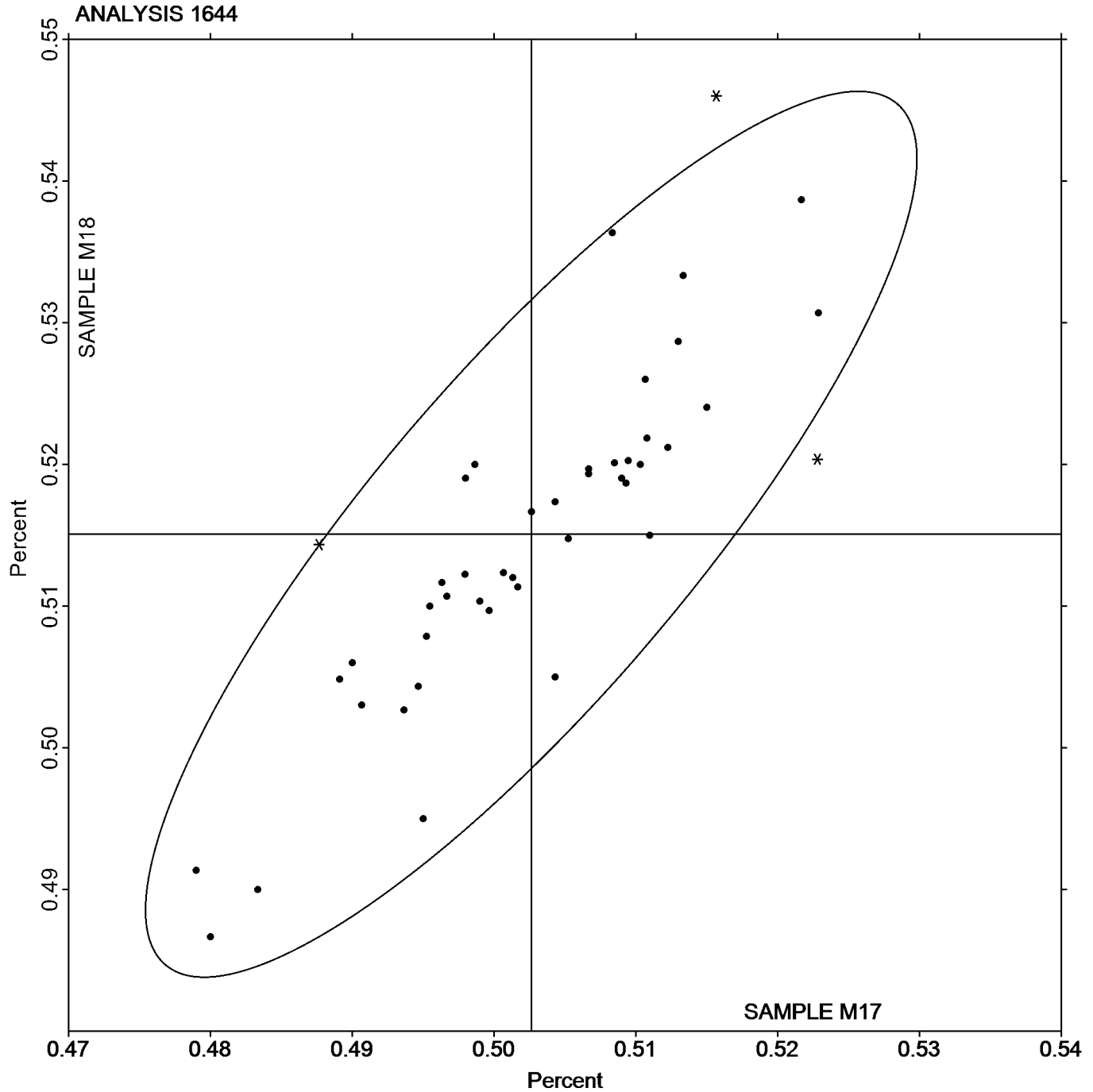
SILICON (Si)

SAMPLE M17

0.5026 Percent

SAMPLE M18

0.5151 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1645****Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.3890	0.0175	1.48	0.1283	-0.0053	-1.04	OE
3WGMRU		0.3777	0.0062	0.52	0.1393	0.0057	1.12	IC
4HGVUW		0.3840	0.0125	1.06	0.1370	0.0034	0.66	IC
6KJ8CH		0.3587	-0.0128	-1.08	0.1259	-0.0077	-1.51	OE
6LEPEJ		0.3723	0.0008	0.07	0.1303	-0.0033	-0.64	XX
6NHUG7		0.3640	-0.0075	-0.63	0.1230	-0.0106	-2.08	OE
6NL8CF		0.3617	-0.0098	-0.83	0.1440	0.0104	2.03	OE
6TTK9R		0.3837	0.0122	1.03	0.1370	0.0034	0.66	OE
7DVTZW		0.3633	-0.0082	-0.69	0.1373	0.0037	0.73	IC
7P8FPM		0.3663	-0.0052	-0.44	0.1356	0.0020	0.39	OE
B6CYYB		0.3903	0.0188	1.60	0.1363	0.0027	0.53	IC
CJ4F2E	X	0.3697	-0.0018	-0.15	0.1607	0.0270	5.30	GD
D6EPRA		0.3740	0.0025	0.21	0.1360	0.0024	0.47	WD
EFAFR9		0.3700	-0.0015	-0.13	0.1300	-0.0036	-0.71	OE
F9QCK7		0.3700	-0.0015	-0.13	0.1400	0.0064	1.25	OE
FA49L4		0.3750	0.0035	0.30	0.1357	0.0020	0.40	WD
FGZ2X4		0.3613	-0.0102	-0.86	0.1283	-0.0053	-1.04	GD
G7HGE8		0.3704	-0.0011	-0.09	0.1329	-0.0007	-0.14	WD
GM9HDK		0.3697	-0.0018	-0.15	0.1340	0.0004	0.07	IC
H26B2Y		0.3780	0.0065	0.55	0.1357	0.0020	0.40	WD
HZ8RA6		0.3732	0.0017	0.15	0.1354	0.0018	0.36	XX
HZQMZ8		0.3772	0.0057	0.48	0.1379	0.0043	0.84	XX
J44TTY		0.3840	0.0125	1.06	0.1377	0.0040	0.79	XX
JAAPCY		0.3670	-0.0045	-0.38	0.1217	-0.0120	-2.34	OE
JTLENB		0.3637	-0.0078	-0.66	0.1340	0.0004	0.07	WD
KE28BB		0.3500	-0.0215	-1.82	0.1340	0.0004	0.07	OE
KUB9PY		0.3447	-0.0268	-2.27	0.1380	0.0044	0.86	OE
L4WM3E		0.3763	0.0048	0.41	0.1257	-0.0080	-1.56	OE
L7NJTU		0.3961	0.0246	2.09	0.1366	0.0030	0.58	OE
LBWZ9A		0.3420	-0.0295	-2.50	0.1320	-0.0016	-0.32	OE
LVL9HX		0.3737	0.0022	0.18	0.1347	0.0010	0.21	XX
MP8XWG		0.3737	0.0022	0.18	0.1390	0.0054	1.05	WD
MREFVD		0.3700	-0.0015	-0.13	0.1280	-0.0056	-1.10	OE
MU4PYC		0.3913	0.0198	1.68	0.1427	0.0091	1.79	XX
MWAXFJ		0.3510	-0.0205	-1.74	0.1317	-0.0020	-0.38	OE
N47ATR		0.3820	0.0105	0.89	0.1330	-0.0006	-0.12	OE
P2EQ97		0.3830	0.0115	0.98	0.1350	0.0014	0.27	XX
QGZPJC		0.3661	-0.0054	-0.45	0.1339	0.0003	0.05	WD
QXB49M		0.3787	0.0072	0.61	0.1361	0.0025	0.49	OE
QXJWB6		0.3724	0.0009	0.08	0.1261	-0.0075	-1.47	WD
RKG9DU		0.3673	-0.0042	-0.35	0.1227	-0.0110	-2.15	OE
TTCFTR		0.3757	0.0042	0.35	0.1327	-0.0010	-0.19	OE
UTQBPJ		0.3816	0.0101	0.86	0.1327	-0.0009	-0.18	WD
UWRA84		0.3626	-0.0089	-0.75	0.1338	0.0002	0.04	OE
YN2FW2		0.3627	-0.0088	-0.75	0.1375	0.0039	0.76	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 154

Analysis 1645

2nd Qtr

Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)

2026

Summary Statistics

	<u>Sample M17</u>		<u>Sample M18</u>	
Grand Means	0.3715	Percent	0.1336	Percent
Std Dev Btwn Labs	0.0118	Percent	0.0051	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 44 of 45 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1645

CJ4F2E (X) - Data for sample M18 are high.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1645

Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)

Cycle 154

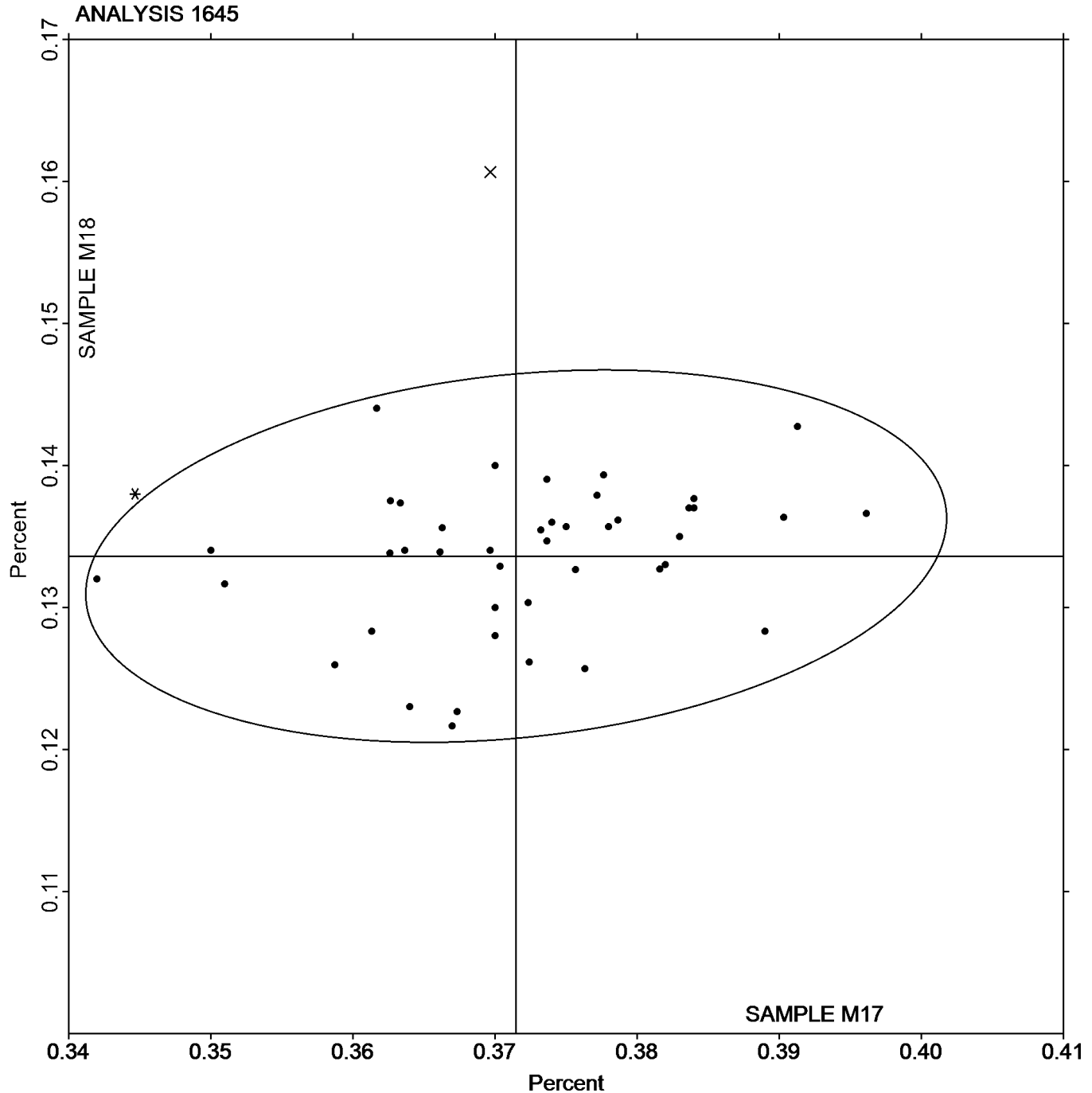
2nd Qtr
2026

SAMPLE M17

0.3715 Percent

SAMPLE M18

0.1336 Percent



**Fasteners and Metals Interlaboratory Testing Program****Cycle 154****Analysis 1646****2nd Qtr****Corrosion Resistant Steel, NICKEL (Ni)****2026****NICKEL (Ni)**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		10.22	0.17	1.88	10.07	0.086	1.09	OE
3WGMURU		10.05	0.00	0.04	9.992	0.009	0.11	TI
4HGVUW		10.17	0.12	1.33	10.05	0.070	0.88	IC
6KJ8CH		10.01	-0.04	-0.41	9.939	-0.044	-0.56	OE
6LEPEJ		10.01	-0.04	-0.42	9.947	-0.037	-0.46	XX
6NHUG7		10.02	-0.03	-0.31	9.877	-0.107	-1.35	OE
6NL8CF		10.06	0.02	0.17	10.05	0.063	0.80	OE
6TTK9R		10.16	0.11	1.25	10.07	0.086	1.09	OE
7DVTZW		10.12	0.08	0.84	10.03	0.050	0.63	IC
7P8FPM		10.16	0.11	1.21	10.09	0.111	1.40	OE
B6CYYB	X	10.64	0.60	6.64	10.54	0.556	7.01	IC
CJ4F2E		9.955	-0.09	-1.04	9.988	0.005	0.06	GD
D6EPRA		10.06	0.01	0.14	9.980	-0.004	-0.04	WD
EFAFR9		9.930	-0.12	-1.31	9.937	-0.047	-0.59	OE
F9QCK7		10.09	0.04	0.43	9.967	-0.017	-0.21	OE
FA49L4		10.09	0.04	0.44	9.998	0.015	0.19	WD
FGZ2X4	*	9.789	-0.26	-2.89	9.842	-0.142	-1.78	GD
G7HGE8		10.01	-0.04	-0.40	9.989	0.005	0.06	WD
GM9HDK	X	9.973	-0.07	-0.83	9.617	-0.367	-4.62	IC
H26B2Y		10.04	-0.01	-0.08	9.985	0.001	0.02	WD
HZ8RA6		10.03	-0.02	-0.21	9.961	-0.022	-0.28	XX
HZQMZ8		9.975	-0.07	-0.81	9.856	-0.128	-1.61	XX
J44TTY		10.00	-0.04	-0.50	9.927	-0.057	-0.72	XX
JAAPCY		10.06	0.01	0.14	9.920	-0.064	-0.80	OE
JTLENB		10.02	-0.02	-0.27	9.950	-0.034	-0.42	WD
KE28BB		10.19	0.14	1.59	10.10	0.116	1.47	OE
KUB9PY	*	10.28	0.23	2.59	10.01	0.029	0.37	OE
L4WM3E		9.907	-0.14	-1.57	9.866	-0.117	-1.48	OE
L7NJTU		10.00	-0.04	-0.50	10.08	0.096	1.21	OE
LBWZ9A		10.05	0.00	0.02	9.880	-0.104	-1.30	OE
LVL9HX		10.02	-0.02	-0.27	9.961	-0.022	-0.28	XX
LWGRKY		10.07	0.02	0.25	10.04	0.056	0.71	IC
MP8XWG		10.07	0.02	0.26	10.01	0.031	0.39	WD
MREFVD		10.06	0.01	0.10	9.983	0.000	0.00	OE
MU4PYC		9.943	-0.11	-1.17	9.914	-0.069	-0.87	OE
MWAXFJ		9.957	-0.09	-1.02	10.07	0.083	1.05	OE
N47ATR	X	9.720	-0.33	-3.66	9.650	-0.334	-4.20	OE
P2EQ97		10.00	-0.05	-0.53	9.930	-0.054	-0.67	OE
QGZPJC		10.05	0.01	0.06	9.975	-0.009	-0.11	WD
QUY8RR		10.06	0.01	0.10	9.956	-0.028	-0.35	WC
QXB49M		10.05	0.00	0.01	9.893	-0.091	-1.14	OE
QXJWB6		10.05	0.00	-0.02	9.957	-0.027	-0.34	WD
RKG9DU		10.09	0.04	0.43	10.07	0.086	1.09	OE
TTCFTR		10.14	0.10	1.07	10.10	0.113	1.42	OE
UTQBPJ		10.07	0.03	0.29	9.999	0.016	0.20	WD
UWRA84	*	10.13	0.08	0.88	10.21	0.228	2.87	OE
YN2FW2		10.08	0.03	0.37	10.01	0.023	0.29	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1646

Corrosion Resistant Steel, NICKEL (Ni)
NICKEL (Ni)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YWXBWL		9.857	-0.19	-2.13	9.823	-0.160	-2.02	OE

Summary Statistics

	Sample M17		Sample M18	
	Grand Means	Percent	Grand Means	Percent
	10.05		9.984	
Std Dev Btwn Labs	Sample M17		Sample M18	
	Std Dev	Percent	Std Dev	Percent
	0.09		0.079	

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 45 of 48 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	TI	Titrimetry
WC	Wet Chemistry	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1646

B6CYYB (X) - Data for both samples are high.

GM9HDK (X) - Data for sample M18 are low.

N47ATR (X) - Data for both samples are low.



Analysis 1646

Corrosion Resistant Steel, NICKEL (Ni)

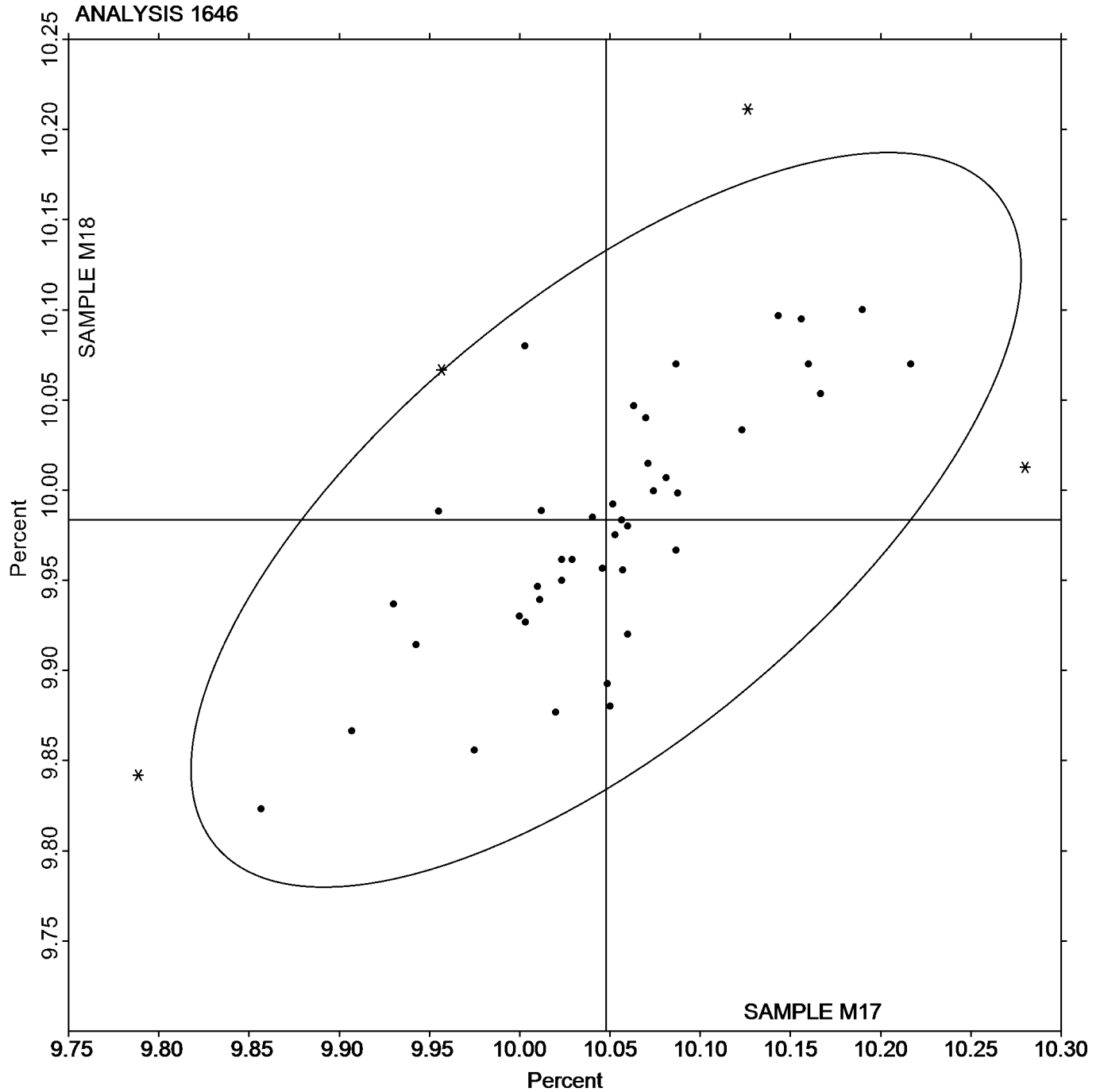
NICKEL (Ni)

SAMPLE M17

SAMPLE M18

10.05 Percent

9.984 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1647

Corrosion Resistant Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		16.61	-0.14	-1.37	16.56	-0.19	-1.79	OE
3WGMURJ		16.52	-0.23	-2.35	16.52	-0.22	-2.16	TI
4HGVUW		16.85	0.10	0.98	16.72	-0.02	-0.18	IC
6KJ8CH		16.69	-0.06	-0.59	16.70	-0.04	-0.41	OE
6LEPEJ		16.77	0.02	0.21	16.74	-0.01	-0.05	XX
6NHUG7		16.92	0.17	1.68	16.97	0.22	2.16	OE
6NL8CF		16.75	0.00	-0.03	16.64	-0.10	-0.95	OE
6TTK9R		16.66	-0.09	-0.87	16.61	-0.13	-1.24	OE
7DVTZW		16.85	0.10	1.01	16.80	0.06	0.59	IC
7P8FPM		16.78	0.03	0.29	16.78	0.04	0.40	OE
A8H2AL	X	16.19	-0.56	-5.63	16.03	-0.72	-6.89	IC
B6CYYB	X	16.82	0.07	0.74	15.65	-1.10	-10.55	IC
CJ4F2E	*	16.71	-0.04	-0.43	16.47	-0.28	-2.65	GD
D6EPRA		16.65	-0.10	-0.97	16.69	-0.06	-0.53	WD
EFAFR9		16.78	0.03	0.27	16.76	0.02	0.20	OE
F9QCK7		16.77	0.02	0.17	16.81	0.07	0.65	OE
FA49L4		16.70	-0.05	-0.53	16.67	-0.07	-0.65	WD
FGZ2X4	X	16.38	-0.37	-3.77	16.30	-0.44	-4.26	GD
G7HGE8		16.81	0.06	0.65	16.84	0.10	0.94	WD
GM9HDK	X	16.40	-0.35	-3.52	16.05	-0.69	-6.66	IC
H26B2Y		16.69	-0.06	-0.63	16.71	-0.03	-0.31	WD
HZ8RA6		16.87	0.12	1.17	16.86	0.12	1.18	XX
HZQMZ8		16.61	-0.14	-1.37	16.67	-0.08	-0.73	XX
J44TTY		16.68	-0.07	-0.70	16.71	-0.03	-0.28	XX
JAAPCY		16.64	-0.11	-1.10	16.71	-0.03	-0.31	OE
KE28BB		16.80	0.05	0.51	16.86	0.12	1.13	OE
KUB9PY	X	16.39	-0.36	-3.59	16.59	-0.15	-1.47	OE
L4WM3E		16.68	-0.07	-0.73	16.63	-0.11	-1.05	OE
L7NJTU		16.83	0.08	0.84	16.79	0.05	0.46	OE
LBWZ9A		16.67	-0.08	-0.80	16.71	-0.03	-0.31	OE
LVL9HX		16.73	-0.02	-0.20	16.73	-0.01	-0.12	XX
LWGRKY		16.85	0.10	1.01	16.83	0.08	0.81	IC
MP8XWG		16.79	0.04	0.42	16.79	0.04	0.42	WD
MREFVD		16.93	0.18	1.78	16.93	0.19	1.81	OE
MU4PYC		16.75	0.00	0.01	16.74	-0.01	-0.06	OE
MWAXFJ		16.76	0.01	0.11	16.81	0.07	0.68	OE
N47ATR		16.74	-0.01	-0.09	16.74	0.00	-0.02	OE
P2EQ97		16.61	-0.14	-1.40	16.63	-0.11	-1.08	OE
QGZPJC		16.67	-0.08	-0.78	16.61	-0.13	-1.29	WD
QUY8RR		16.74	-0.01	-0.06	16.71	-0.03	-0.27	WC
QXB49M		16.71	-0.04	-0.39	16.74	-0.01	-0.06	OE
QXJWB6		16.75	0.00	-0.01	16.67	-0.08	-0.73	WD
RKG9DU		16.80	0.05	0.51	16.74	0.00	0.01	OE
TTCFTR	X	16.86	0.11	1.11	17.24	0.50	4.82	OE
UTQBPJ		16.81	0.06	0.58	16.79	0.05	0.46	WD
UWRA84	X	16.29	-0.46	-4.60	16.32	-0.42	-4.07	OE
YN2FW2	*	17.02	0.27	2.74	17.02	0.28	2.67	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 154

Analysis 1647

2nd Qtr

Corrosion Resistant Steel, CHROMIUM (Cr)

2026

CHROMIUM (Cr)

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YWXBWL	X	16.96	0.21	2.12	17.10	0.36	3.44	OE

Summary Statistics

	Sample M17		Sample M18	
	Grand Means	Percent	Grand Means	Percent
	16.75	Percent	16.74	Percent
Std Dev Btwn Labs	0.10	Percent	0.10	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 39 of 48 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	TI	Titrimetry
WC	Wet Chemistry	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1647

- A8H2AL (X) - Data for both samples are low. Possible Systematic Error.
- B6CYYB (X) - Data for sample M18 are low. Inconsistent within the determinations of sample M18.
- FGZ2X4 (X) - Data for both samples are low. Possible Systematic Error.
- GM9HDK (X) - Data for both samples are low. Possible Systematic Error.
- KUB9PY (X) - Data for sample M17 are low. Inconsistent within the determinations of both samples.
- TTCFTR (X) - Data for sample M18 are high. Inconsistent within the determinations of sample M18.
- UWRA84 (X) - Data for both samples are low. Possible Systematic Error.
- YWXBWL (X) - Data for sample M18 are high.



Analysis 1647

Corrosion Resistant Steel, CHROMIUM (Cr)

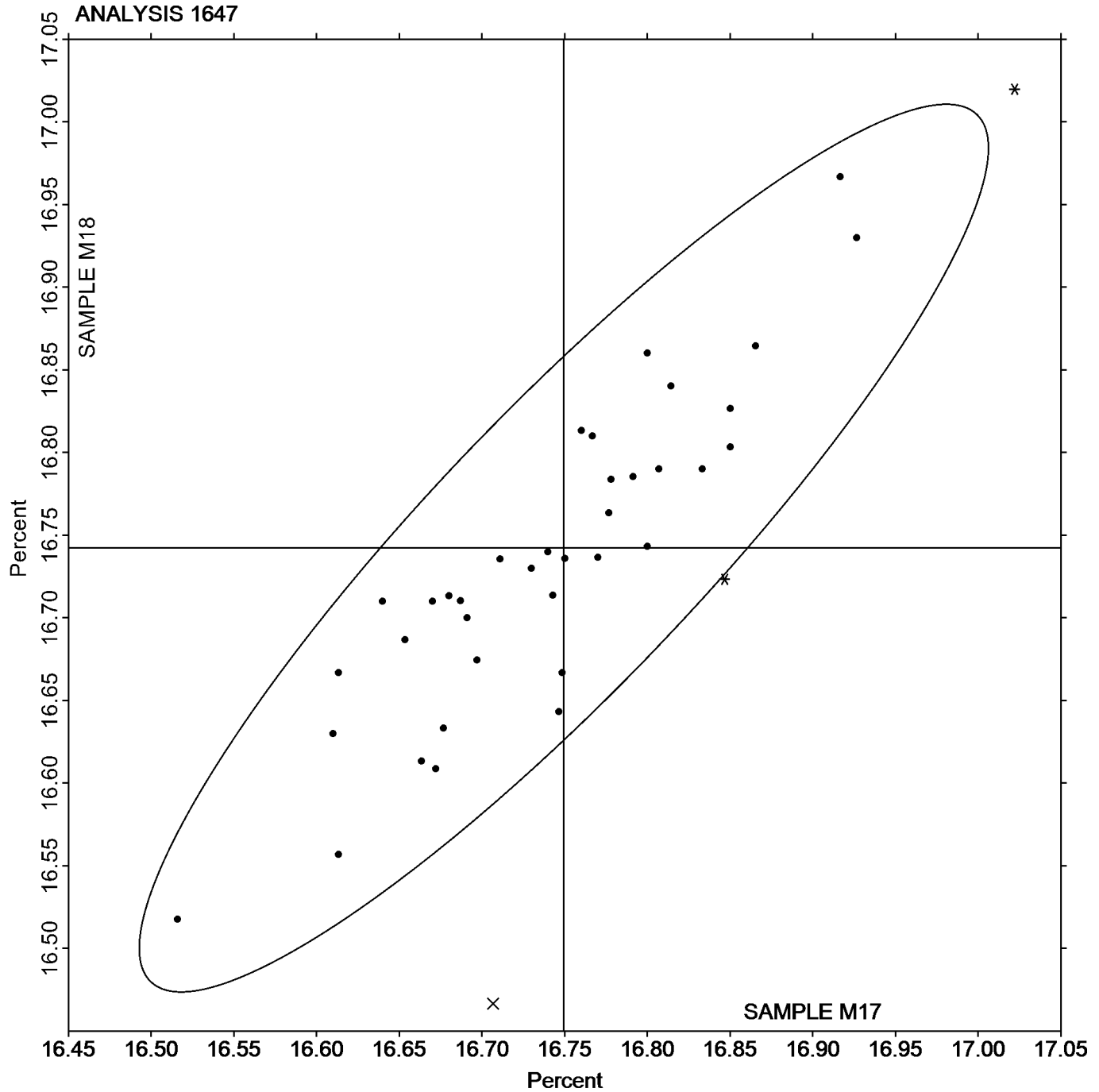
CHROMIUM (Cr)

SAMPLE M17

SAMPLE M18

16.75 Percent

16.74 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4	*	2.207	0.136	3.03	2.250	0.136	3.02	OE
3WGMRU		2.060	-0.010	-0.22	2.104	-0.010	-0.23	IC
4HGVUW		2.118	0.047	1.05	2.154	0.040	0.89	IC
6KJ8CH		2.059	-0.012	-0.26	2.102	-0.012	-0.27	OE
6LEPEJ	X	2.077	0.006	0.14	2.243	0.129	2.87	XX
6NHUG7		2.090	0.020	0.44	2.117	0.002	0.05	OE
6NL8CF		2.057	-0.014	-0.30	2.117	0.002	0.05	OE
6TTK9R		2.012	-0.058	-1.29	2.071	-0.043	-0.95	OE
7DVTZW		2.132	0.061	1.36	2.192	0.077	1.72	IC
7P8FPM		2.051	-0.020	-0.44	2.096	-0.018	-0.41	OE
A8H2AL		2.020	-0.050	-1.11	2.090	-0.024	-0.54	IC
B6CYYB	X	2.156	0.086	1.90	2.247	0.133	2.95	IC
CJ4F2E		2.020	-0.050	-1.11	2.060	-0.054	-1.21	GD
D6EPRA		2.070	0.000	-0.01	2.117	0.002	0.05	WD
EFAFR9		2.053	-0.017	-0.38	2.117	0.002	0.05	OE
F9QCK7		2.087	0.016	0.36	2.143	0.029	0.65	OE
FA49L4		2.051	-0.019	-0.43	2.094	-0.020	-0.44	WD
FGZ2X4		2.003	-0.068	-1.50	2.017	-0.098	-2.17	XX
G7HGE8		2.064	-0.007	-0.15	2.112	-0.003	-0.06	WD
GM9HDK		2.072	0.002	0.05	2.110	-0.004	-0.09	IC
H26B2Y		2.057	-0.013	-0.29	2.110	-0.004	-0.09	WD
HZ8RA6		2.058	-0.012	-0.27	2.103	-0.012	-0.26	XX
HZQMZ8		2.115	0.045	0.99	2.117	0.002	0.05	XX
J44TTY		2.110	0.040	0.88	2.113	-0.001	-0.02	XX
JAAPCY		2.088	0.018	0.39	2.130	0.015	0.34	OE
JTLENB		2.068	-0.002	-0.05	2.100	-0.014	-0.32	WD
KE28BB		2.073	0.003	0.06	2.114	0.000	0.00	OE
KUB9PY	*	2.192	0.122	2.71	2.222	0.108	2.40	OE
L4WM3E		2.182	0.111	2.47	2.234	0.120	2.67	OE
L7NJTU		2.007	-0.063	-1.40	2.079	-0.035	-0.78	OE
LBWZ9A		2.080	0.010	0.22	2.110	-0.004	-0.09	OE
LVL9HX		2.062	-0.008	-0.18	2.109	-0.006	-0.12	XX
LWGRKY		2.075	0.004	0.10	2.122	0.008	0.17	IC
MP8XWG		2.078	0.008	0.17	2.121	0.007	0.15	WD
MREFVD		2.060	-0.010	-0.23	2.100	-0.014	-0.32	OE
MU4PYC		1.995	-0.075	-1.67	2.015	-0.099	-2.21	OE
MWAXFJ		2.050	-0.020	-0.45	2.087	-0.028	-0.61	OE
N47ATR		2.060	-0.010	-0.23	2.114	0.000	0.00	OE
P2EQ97		2.070	0.000	-0.01	2.140	0.026	0.57	OE
QGZPJC		2.056	-0.014	-0.31	2.101	-0.014	-0.30	WD
QXB49M		2.068	-0.002	-0.05	2.092	-0.022	-0.49	OE
QXJWB6		2.064	-0.006	-0.13	2.108	-0.006	-0.14	WD
RKG9DU		2.010	-0.060	-1.34	2.080	-0.034	-0.76	OE
TTCFTR		2.036	-0.035	-0.77	2.081	-0.033	-0.73	OE
UTQBPJ		2.063	-0.008	-0.17	2.108	-0.006	-0.13	WD
UWRA84	X	2.299	0.229	5.07	2.375	0.261	5.81	OE
YN2FW2	*	2.037	-0.033	-0.74	2.176	0.062	1.37	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YWXBWL		2.090	0.020	0.44	2.153	0.039	0.87	OE

Summary Statistics

	Sample M17		Sample M18	
	Grand Means	Percent	Grand Means	Percent
	2.070		2.114	
Stnd Dev Btwn Labs	0.045	Percent	0.045	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 44 of 48 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1648

6LEPEJ (X) - Data for sample M18 are high.

B6CYYB (X) - Data for sample M18 are high.

UWRA84 (X) - Data for both samples are high. Possible Systematic Error.

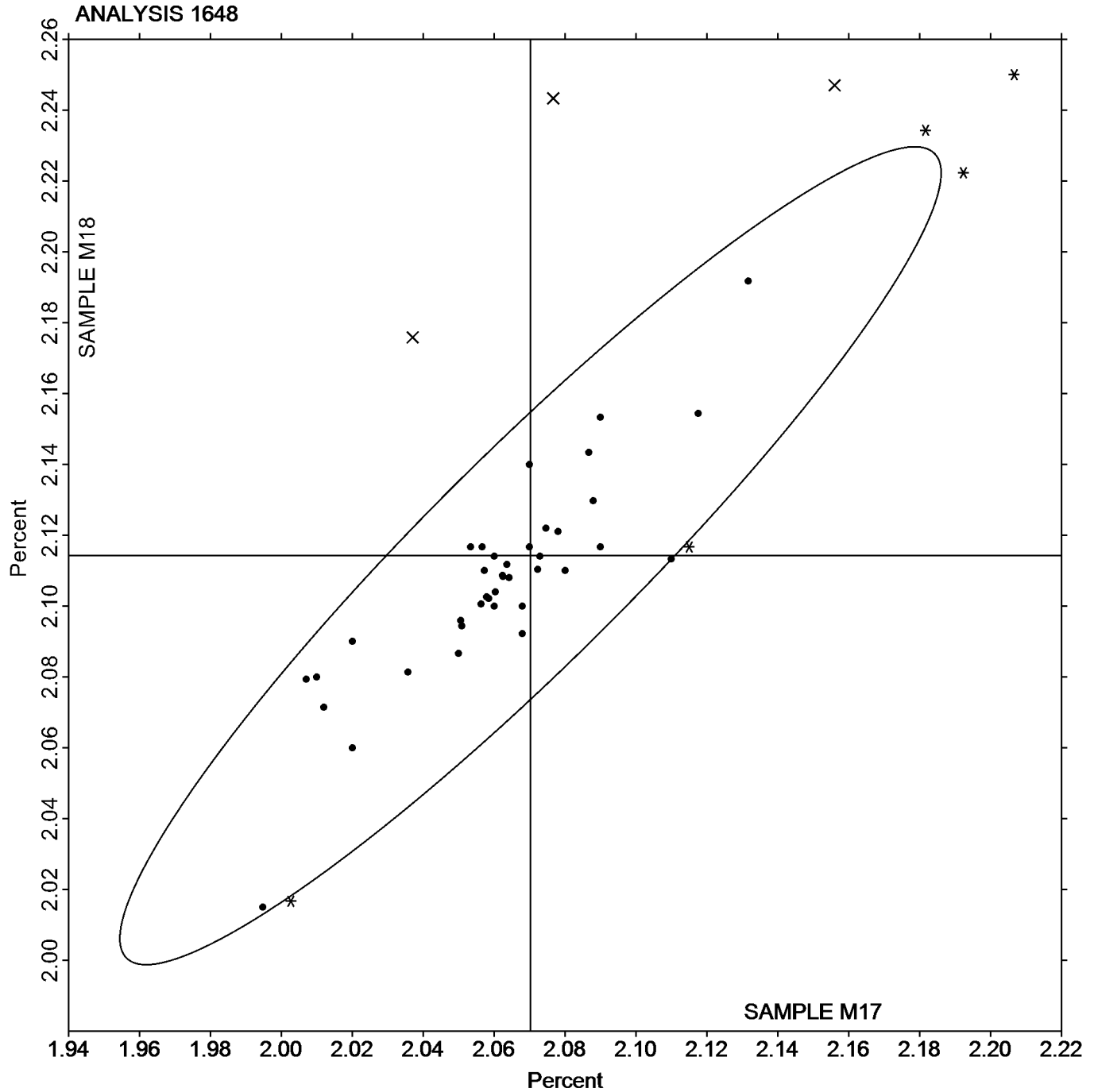


SAMPLE M17

2.070 Percent

SAMPLE M18

2.114 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1649****Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)****Cycle 154****2nd Qtr
2026**

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.3823	-0.0064	-0.70	0.5933	-0.0035	-0.20	OE
3WGMRU		0.3980	0.0093	1.03	0.6137	0.0168	0.95	IC
4HGVUW		0.3990	0.0103	1.14	0.6157	0.0188	1.07	IC
6KJ8CH		0.3786	-0.0101	-1.11	0.5761	-0.0207	-1.17	OE
6LEPEJ	X	0.0384	-0.3503	-38.72	0.5950	-0.0018	-0.10	XX
6NHUG7		0.3890	0.0003	0.03	0.6183	0.0215	1.22	OE
6NL8CF		0.3783	-0.0104	-1.15	0.5910	-0.0058	-0.33	OE
6TTK9R		0.4067	0.0180	1.99	0.6333	0.0365	2.07	OE
7DVTZW		0.3833	-0.0054	-0.59	0.5910	-0.0058	-0.33	IC
A8H2AL		0.3793	-0.0094	-1.04	0.5713	-0.0255	-1.44	IC
B6CYYB		0.3957	0.0070	0.77	0.5960	-0.0008	-0.05	IC
CJ4F2E		0.4003	0.0116	1.29	0.6060	0.0092	0.52	GD
D6EPRA		0.3870	-0.0017	-0.19	0.6030	0.0062	0.35	WD
EFAFR9		0.3833	-0.0054	-0.59	0.5767	-0.0202	-1.14	OE
F9QCK7	X	0.3700	-0.0187	-2.07	0.1400	-0.4568	-25.88	OE
FA49L4		0.3923	0.0036	0.40	0.6023	0.0055	0.31	WD
FGZ2X4		0.3913	0.0026	0.29	0.6080	0.0112	0.63	GD
G7HGE8		0.3901	0.0014	0.16	0.6053	0.0085	0.48	WD
GM9HDK	*	0.4173	0.0286	3.16	0.6223	0.0255	1.44	IC
H26B2Y		0.3860	-0.0027	-0.30	0.5917	-0.0052	-0.29	WD
HZ8RA6		0.3869	-0.0018	-0.20	0.5955	-0.0013	-0.07	XX
HZQMZ8		0.3841	-0.0046	-0.51	0.5901	-0.0067	-0.38	XX
J44TTY		0.3853	-0.0034	-0.37	0.6150	0.0182	1.03	XX
JAAPCY	X	0.3867	-0.0020	-0.23	0.6733	0.0765	4.33	OE
JTLENB		0.3820	-0.0067	-0.74	0.5960	-0.0008	-0.05	WD
KE28BB		0.4010	0.0123	1.36	0.5930	-0.0038	-0.22	OE
KUB9PY		0.3787	-0.0100	-1.11	0.5877	-0.0092	-0.52	OE
L4WM3E		0.4010	0.0123	1.36	0.6197	0.0228	1.29	OE
L7NJTU		0.3853	-0.0034	-0.38	0.6188	0.0220	1.24	OE
LBWZ9A		0.3790	-0.0097	-1.07	0.5860	-0.0108	-0.61	OE
LVL9HX		0.3837	-0.0050	-0.56	0.5953	-0.0015	-0.08	XX
LWGRKY		0.3870	-0.0017	-0.19	0.5937	-0.0032	-0.18	IC
MP8XWG		0.3810	-0.0077	-0.85	0.5880	-0.0088	-0.50	WD
MREFVD	X	0.4097	0.0210	2.32	0.6717	0.0748	4.24	OE
MU4PYC		0.4033	0.0146	1.62	0.6251	0.0283	1.60	OE
MWAXFJ		0.3760	-0.0127	-1.40	0.5980	0.0012	0.07	OE
N47ATR		0.3820	-0.0067	-0.74	0.5820	-0.0148	-0.84	OE
P2EQ97		0.3850	-0.0037	-0.41	0.5950	-0.0018	-0.10	OE
QGZPJC		0.3805	-0.0082	-0.91	0.5897	-0.0071	-0.40	WD
QXB49M		0.3821	-0.0066	-0.73	0.5711	-0.0257	-1.46	OE
QXJWB6		0.3878	-0.0009	-0.10	0.6030	0.0061	0.35	WD
RKG9DU		0.3960	0.0073	0.81	0.5830	-0.0138	-0.78	OE
TTCFTR		0.3907	0.0020	0.22	0.5893	-0.0075	-0.42	OE
UTQBPJ		0.3864	-0.0023	-0.25	0.6028	0.0060	0.34	WD
UWRA84		0.3923	0.0036	0.39	0.5611	-0.0358	-2.03	OE
YN2FW2	*	0.3797	-0.0090	-1.00	0.5478	-0.0491	-2.78	OE
YWXBWL		0.3993	0.0106	1.17	0.6220	0.0252	1.43	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1649

Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)

Cycle 154

2nd Qtr
2026

Summary Statistics

	<u>Sample M17</u>		<u>Sample M18</u>	
Grand Means	0.3887	Percent	0.5968	Percent
Stnd Dev Btwn Labs	0.0090	Percent	0.0177	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 43 of 47 reporting participants

Key to Method Codes Reported by Participants

GD Spectrometry - Glow Discharge (GDS) IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES) WD X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1649

6LEPEJ (X) - Data for sample M17 appear to be off by a factor of ten.
F9QCK7 (X) - Data for sample M18 are low.
JAAPCY (X) - Data for sample M18 are high.
MREFVD (X) - Data for sample M18 are high. Inconsistent within the determinations of sample M17.

Analysis 1649

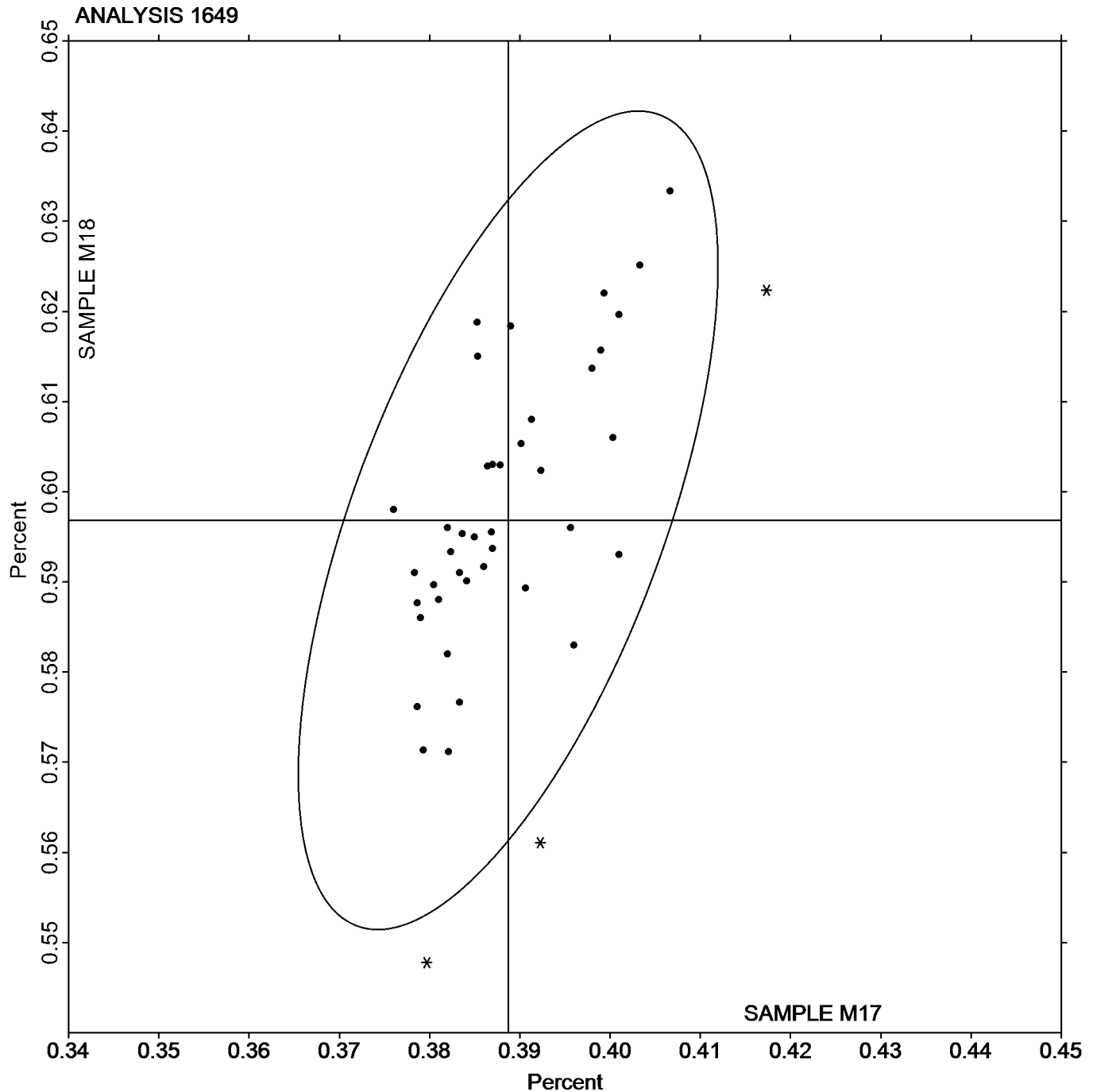
**Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)**

SAMPLE M17

0.3887 Percent

SAMPLE M18

0.5968 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)
NITROGEN (N)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.0466	0.0012	0.20	0.0608	-0.0033	-0.38	OE
3WGMRU		0.0470	0.0016	0.26	0.0651	0.0009	0.11	XX
6KJ8CH		0.0423	-0.0031	-0.49	0.0605	-0.0036	-0.42	OE
6LEPEJ		0.0570	0.0116	1.86	0.0836	0.0194	2.22	XX
6NL8CF		0.0446	-0.0008	-0.12	0.0563	-0.0079	-0.91	OE
6TTK9R	X	0.00770	-0.0377	-6.03	0.0243	-0.0398	-4.56	OE
7DVTZW		0.0509	0.0055	0.88	0.0699	0.0058	0.66	CO
7P8FPM		0.0330	-0.0124	-1.98	0.0638	-0.0004	-0.04	OE
9R8C9E		0.0494	0.0041	0.65	0.0703	0.0062	0.71	CO
EFAFR9		0.0488	0.0034	0.55	0.0705	0.0063	0.72	CO
F9QCK7	X	0.1633	0.1180	18.87	0.1767	0.1125	12.88	OE
G7HGE8		0.0482	0.0028	0.45	0.0673	0.0031	0.35	CO
GM9HDK		0.0479	0.0026	0.41	0.0663	0.0022	0.25	CI
H26B2Y		0.0483	0.0029	0.46	0.0683	0.0041	0.47	CO
HZ8RA6		0.0471	0.0018	0.28	0.0660	0.0018	0.21	XX
HZQMZ8		0.0383	-0.0071	-1.13	0.0431	-0.0211	-2.41	XX
J44TTY	*	0.0250	-0.0203	-3.25	0.0393	-0.0249	-2.85	XX
JAAPCY		0.0473	0.0020	0.31	0.0583	-0.0058	-0.67	OE
KE28BB		0.0474	0.0020	0.32	0.0680	0.0038	0.44	OE
KUB9PY		0.0357	-0.0097	-1.55	0.0483	-0.0158	-1.81	OE
LBWZ9A		0.0455	0.0001	0.02	0.0610	-0.0032	-0.36	OE
LVL9HX		0.0465	0.0011	0.18	0.0658	0.0016	0.19	XX
LWGRKY		0.0489	0.0036	0.57	0.0680	0.0038	0.44	CO
MP8XWG		0.0470	0.0016	0.26	0.0663	0.0022	0.25	CI
MU4PYC		0.0374	-0.0080	-1.28	0.0575	-0.0067	-0.76	OE
MWAXFJ		0.0461	0.0007	0.11	0.0651	0.0009	0.11	OE
N47ATR		0.0489	0.0035	0.56	0.0694	0.0052	0.60	CO
P2EQ97		0.0427	-0.0027	-0.43	0.0573	-0.0069	-0.79	OE
QGZPJC		0.0503	0.0049	0.79	0.0707	0.0065	0.75	CO
QXB49M		0.0491	0.0037	0.59	0.0791	0.0149	1.71	OE
QXJWB6		0.0481	0.0027	0.44	0.0673	0.0031	0.35	XX
RKG9DU		0.0465	0.0012	0.19	0.0618	-0.0023	-0.27	OE
TTCFTR		0.0468	0.0014	0.22	0.0676	0.0034	0.39	OE
UTQBPJ		0.0358	-0.0096	-1.54	0.0667	0.0026	0.29	OE
YN2FW2		0.0529	0.0075	1.20	0.0683	0.0041	0.47	OE

Summary Statistics

	Sample M17		Sample M18	
Grand Means	0.0454	Percent	0.0642	Percent
Std Dev Btwn Labs	0.0063	Percent	0.0087	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 33 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)
NITROGEN (N)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1650

6TTK9R (X) - Data for both samples are low.

F9QCK7 (X) - Data for both samples are high.



Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)

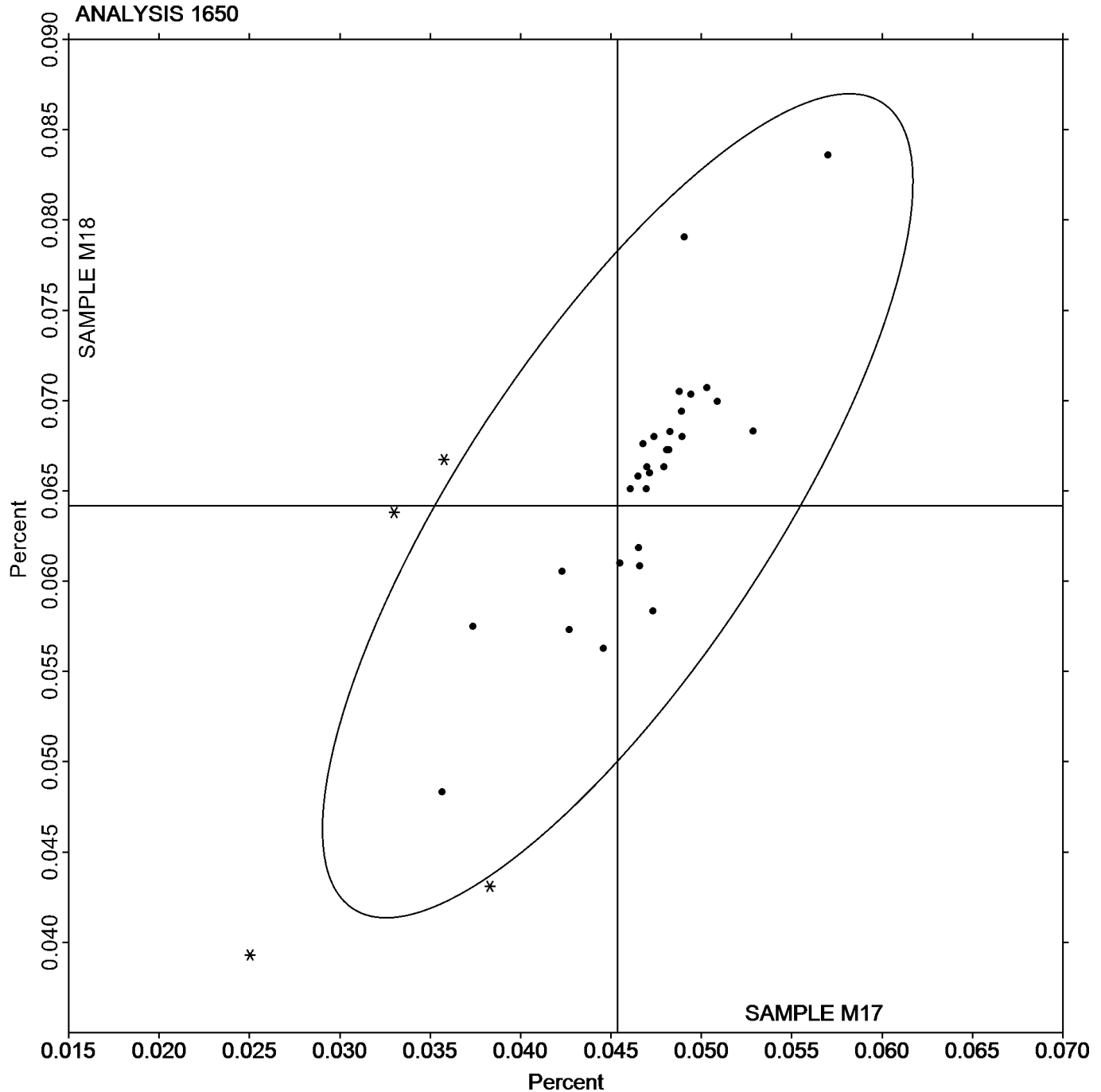
NITROGEN (N)

SAMPLE M17

SAMPLE M18

0.0454 Percent

0.0642 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1651

Corrosion Resistant Steel, TUNGSTEN (W)
TUNGSTEN (W)

Cycle 154

2nd Qtr
2026

WebCode	Data Flag	Sample M17			Sample M18			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2NT3H4		0.0752	0.0054	0.62	0.0333	0.0015	0.19	OE
3WGMRU		0.0668	-0.0030	-0.34	0.0255	-0.0063	-0.81	IC
4HGVUW		0.0701	0.0003	0.04	0.0291	-0.0027	-0.34	IC
6KJ8CH		0.0758	0.0060	0.69	0.0425	0.0107	1.37	OE
6LEPEJ		0.0479	-0.0220	-2.53	0.0216	-0.0102	-1.31	XX
6NL8CF		0.0699	0.0001	0.01	0.0312	-0.0006	-0.08	OE
6TTK9R	X	0.1827	0.1128	13.00	0.1390	0.1072	13.76	OE
7DVTZW		0.0853	0.0155	1.79	0.0470	0.0152	1.95	IC
7P8FPM		0.0869	0.0171	1.97	0.0413	0.0095	1.22	OE
B6CYYB		0.0613	-0.0085	-0.98	0.0199	-0.0119	-1.53	IC
CJ4F2E		0.0620	-0.0078	-0.90	0.0273	-0.0045	-0.58	GD
D6EPRA		0.0723	0.0025	0.29	0.0337	0.0019	0.24	WD
EFAFR9		0.0660	-0.0038	-0.44	0.0307	-0.0011	-0.15	OE
F9QCK7		0.0653	-0.0045	-0.52	0.0273	-0.0045	-0.58	OE
FA49L4		0.0710	0.0012	0.14	0.0350	0.0032	0.41	WD
FGZ2X4	*	0.0472	-0.0226	-2.60	0.00917	-0.0226	-2.91	GD
G7HGE8		0.0823	0.0125	1.44	0.0400	0.0082	1.05	WD
GM9HDK		0.0677	-0.0022	-0.25	0.0281	-0.0037	-0.48	IC
H26B2Y		0.0727	0.0028	0.33	0.0320	0.0002	0.02	WC
HZQMZ8		0.0566	-0.0132	-1.52	0.0290	-0.0028	-0.36	XX
J44TTY		0.0715	0.0017	0.20	0.0237	-0.0081	-1.05	XX
JAAPCY		0.0733	0.0035	0.41	0.0383	0.0065	0.84	OE
KE28BB		0.0710	0.0012	0.14	0.0241	-0.0077	-0.99	OE
KUB9PY	X	0.1720	0.1022	11.77	0.1380	0.1062	13.63	OE
L7NJTU		0.0817	0.0118	1.37	0.0326	0.0008	0.10	OE
LBWZ9A		0.0700	0.0002	0.02	0.0344	0.0026	0.33	OE
LVL9HX		0.0710	0.0012	0.14	0.0355	0.0037	0.47	XX
MP8XWG		0.0760	0.0062	0.71	0.0353	0.0035	0.45	WD
MU4PYC		0.0662	-0.0037	-0.42	0.0322	0.0004	0.05	OE
N47ATR		0.0808	0.0110	1.27	0.0460	0.0142	1.82	OE
P2EQ97		0.0637	-0.0061	-0.70	0.0281	-0.0037	-0.48	OE
QGZPJC		0.0620	-0.0079	-0.90	0.0204	-0.0114	-1.47	WD
QXB49M	*	0.0506	-0.0192	-2.21	0.0370	0.0052	0.67	OE
QXJWB6		0.0695	-0.0003	-0.04	0.0302	-0.0016	-0.21	WD
RKG9DU		0.0711	0.0013	0.15	0.0369	0.0051	0.65	OE
TTCFTR		0.0666	-0.0032	-0.37	0.0334	0.0016	0.20	OE
UTQBPJ		0.0657	-0.0041	-0.47	0.0346	0.0028	0.35	OE
UWRA84		0.0751	0.0053	0.61	0.0441	0.0123	1.58	OE
YN2FW2		0.0756	0.0058	0.67	0.0319	0.0001	0.01	OE

Summary Statistics

		Sample M17		Sample M18	
Grand Means		0.0698	Percent	0.0318	Percent
Std Dev Btwn Labs		0.0087	Percent	0.0078	Percent

Samples M17, M18 : AISI 316, AISI 316L

Statistics based on 36 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1651

Corrosion Resistant Steel, TUNGSTEN (W)
TUNGSTEN (W)

Cycle 154

2nd Qtr
2026

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WC	Wet Chemistry
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1651

6TTK9R (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

KUB9PY (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.



Analysis 1651

Corrosion Resistant Steel, TUNGSTEN (W)

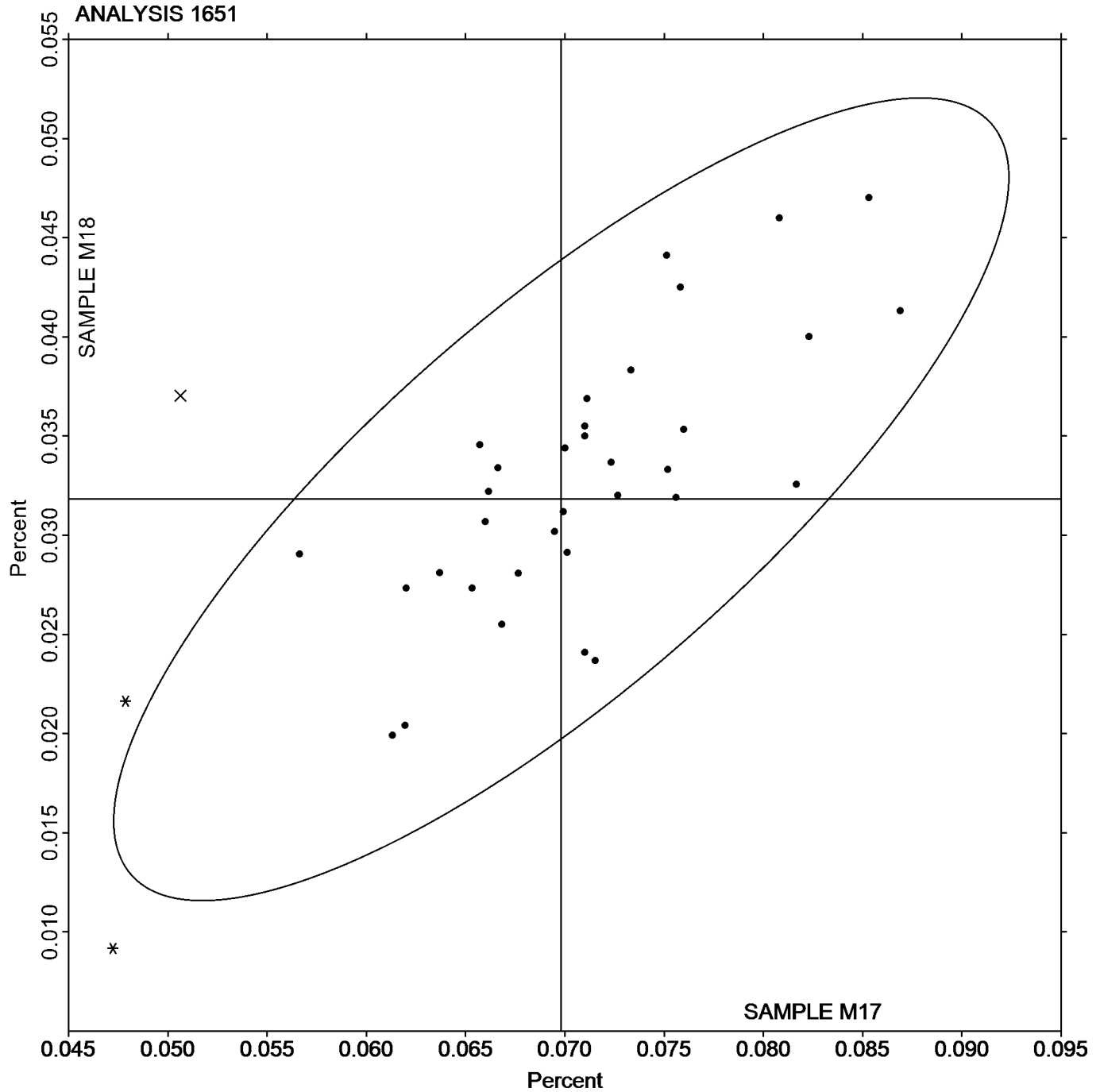
TUNGSTEN (W)

SAMPLE M17

SAMPLE M18

0.0698 Percent

0.0318 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1651

**Corrosion Resistant Steel, TUNGSTEN (W)
TUNGSTEN (W)**

Cycle 154

**2nd Qtr
2026**

-End of Report-