

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 153, 1st Qtr 2026

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

<u>Analysis</u>	<u>Test Group</u>
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Dimensional Tests	
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1001	Dimensional: Outside Diameter of Plain Plug Gage
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Tensile Tests	
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1101	Tensile Strength: Lab-Machined Flat Aluminum
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1102	Yield Strength: Lab-Machined Flat Aluminum
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1103	Elongation: Lab-Machined Flat Aluminum
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1111	Tensile Strength: Pre-Machined Round Steel
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1112	Yield Strength: Pre-Machined Round Steel
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1113	Elongation: Pre-Machined Round Steel
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1114	Reduction of Area: Pre-Machined Round Steel
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1121	Tensile Strength: Lab-Machined Round Steel
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1122	Yield Strength: Lab-Machined Round Steel
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1123	Elongation: Lab-Machined Round Steel
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1124	Reduction of Area: Lab-Machined Round Steel
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Hardness / Metallography Tests	
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1302	Rockwell Hardness: B Scale
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1321	Microhardness: Knoop Indenters (500 gf)
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1322	Microhardness: Knoop Indenters (200 gf)
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1323	Microhardness: Vickers Indenters (500 gf)
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1341	Brinell Hardness
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Chemical Analyses	
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1600 - 1610	Chemical Analysis: Carbon & Low Alloy Steel
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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:

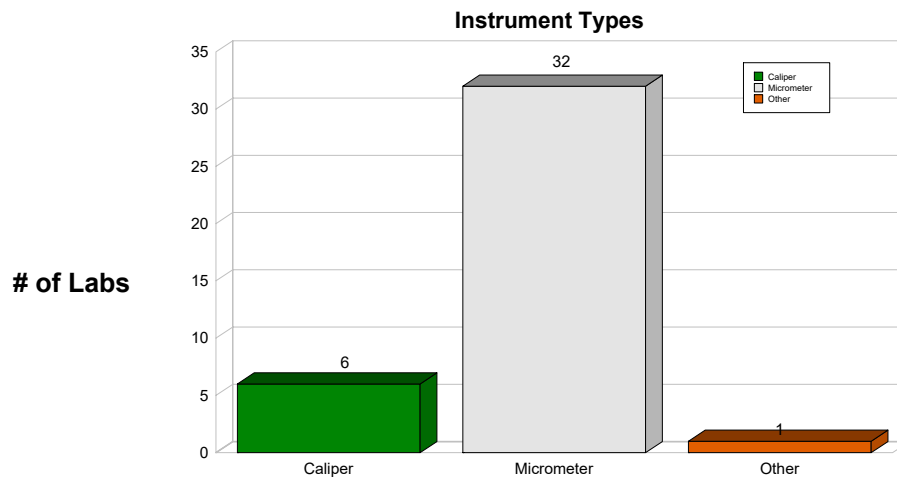
Data Flags

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.



Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

During Cycle 153, CTS conducted the Analysis #1001 - Round Dimensional. For this test all participants received two samples I15 and I16 with nominal diameters; 0.3746 in. and 0.3750 in. Each sample is an English Class X gage pin with 0.00002 in roundness limit made from 52100 bearing steel, hardened to 60-62 Rockwell C. Laboratories were asked to determine the outside diameter of the pins. 39 laboratories that subscribed for this test reported testing results. The graph below shows a breakdown of the types of instruments used.



Analysis of the Results

The most convenient and common method of judging the quality of measurement results is by calculating the performance statistic, E_n , calculated as:

$$E_n = \frac{(X_{lab} - X_{ref})}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Where the assigned value, X_{ref} , is determined in a reference laboratory, U_{ref} is the expanded uncertainty of X_{ref} , and U_{lab} is the **Expanded Uncertainty** of a participant's result, X_{lab} . E_n is not calculated for Labs who did not report their Expanded Uncertainty.

Absolute values of E_n less than **1.00** should be obtained for the measurements to be acceptable.

H and **L** flags are applied when the Expanded Uncertainty data are unusual. These flags do not indicate that the U_{lab} is invalid. Circumstances particular to a laboratory may lead to unusual uncertainty estimates that are a true reflection of testing. However, the validity of the performance statistics calculated by CTS is directly tied to the validity of the reported expanded uncertainty. If an **H** or **L** flag is applied to a U_{lab} , CTS recommends a review of the uncertainty budget to ensure its accuracy.

The following graph and the table represent the results reported by participants. All tests were conducted at room temperature (20-23C or 68-77F).

X_{ref} and U_{ref} were determined by the gage pin manufacturer. The manufacturer is ISO 9001 Certified and an ISO 17025 Accredited company. All master gages used in checking the plug gages are calibrated with standards traceable to NIST.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1001

Cycle 153
1st Qtr 2026

Dimensional: Outside Diameter of Plain Plug Gage ISO GUM

$$E_n = \frac{(X_{lab} - X_{ref})}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.3746 in.

Xref2 = 0.3750 in.

Sample I15

Sample I16

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)		Lab Mean (Xlab)	Performance Statistic (En1)	Lab Mean (Xlab)	Performance Statistic (En2)	Instrument
36FC2Q		0.00004	0.00135	H	0.37450	-0.07	0.37490	-0.07	Micrometer
37BU4R		0.00004	0.00008	L	0.37460	-0.02	0.37499	-0.09	Micrometer
3FX63L	X	0.00004	0.00005	L	0.37455	-0.78	0.37490	-1.56	Micrometer
46XKQK		0.00004	0.00010		0.37459	-0.09	0.37496	-0.37	Micrometer
4GA8EC		0.00004	0.00019		0.37446	-0.72	0.37490	-0.52	Micrometer
6DJHJX	M	0.00004	Not Reported		0.37458		0.37498		Micrometer
7HUR9L		0.00004	0.00100		0.37444	-0.16	0.37482	-0.18	Micrometer
9MEQCQ	X	0.00004	0.00002	L	0.37440	-4.64	0.37481	-4.41	Micrometer
9NUQX2	M	0.00004	Not Reported		0.37220		0.37410		Caliper
AHKZW8	M	0.00004	Not Reported		0.37450		0.37490		Micrometer
AJAKCB		0.00004	0.00017		0.37450	-0.56	0.37502	0.11	Micrometer
BGZRX3		0.00004	0.00009		0.37460	0.00	0.37500	0.00	Micrometer
BLUUYG		0.00004	0.00094		0.37441	-0.20	0.37480	-0.21	Caliper
C644JE		0.00004	0.00012		0.37462	0.17	0.37503	0.22	Micrometer
CBCHCC		0.00004	0.00010		0.37462	0.19	0.37502	0.19	Micrometer
CCLHKY		0.00004	0.00118		0.37462	0.02	0.37501	0.01	Micrometer
DLPRP4		0.00004	0.00023		0.37443	-0.75	0.37482	-0.79	Micrometer
DTBXC3		0.00004	0.00260		0.37450	-0.04	0.37500	0.00	Caliper
EMYDFG		0.00004	0.00445	H	0.37612	0.34	0.37551	0.11	Micrometer
FBWHUQ		0.00004	0.00020		0.37460	0.00	0.37500	0.00	Micrometer
GCNMZJ		0.00004	0.06299	H	0.37457	0.00	0.37495	0.00	Micrometer
HM2K6D	X	0.00004	0.00010		0.37428	-2.97	0.37468	-2.97	Micrometer
JQZVZD	X	0.00004	0.00008	L	0.37450	-1.09	0.37490	-1.16	Micrometer
KAPUGV		0.00004	0.00040		0.37440	-0.50	0.37490	-0.25	Micrometer
KBLAR8	X	0.00004	0.00059		0.37400	-1.02	0.37450	-0.85	Micrometer
KEKMCC		0.00004	0.00011		0.37458	-0.14	0.37498	-0.19	Micrometer
LGQ6B8	M	0.00004	Not Reported		0.37380		0.37400		Caliper
NCM9K4		0.00004	0.02756	H	0.37457	0.00	0.37495	0.00	Micrometer
NWUJKZ		0.00004	0.07874	H	0.37451	0.00	0.37487	0.00	Micrometer
PL6ADH	X	0.00004	0.00034		0.37422	-1.11	0.37460	-1.17	Micrometer
Q2DN7Z		0.00004	0.00040		0.37453	-0.17	0.37493	-0.17	Micrometer
QBNPRZ	X	0.00004	0.00004	L	0.37445	-2.52	0.37505	0.84	Micrometer
QEL77F		0.00004	0.00196		0.37442	-0.09	0.37483	-0.09	Other



**Fasteners and Metals Interlaboratory Testing Program
Analysis 1001**

**Cycle 153
1st Qtr 2026**

**Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM**

$$E_n = \frac{(X_{lab} - X_{ref})}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.3746 in.

Xref2 = 0.3750 in.

Sample I15

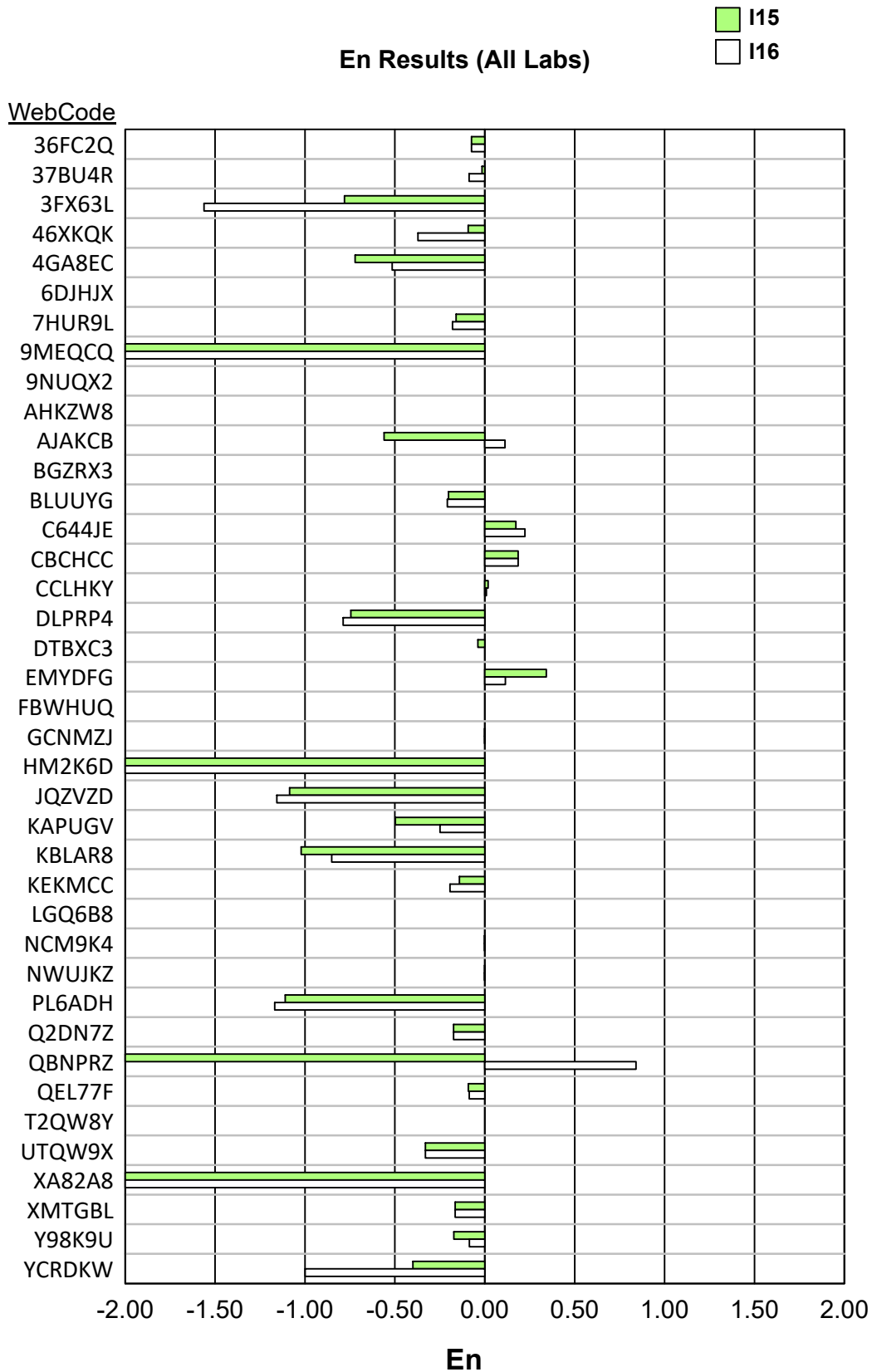
Sample I16

<u>WebCode</u>	<u>Data Flag</u> (if assigned)	<u>Reference</u> <u>Uncertainty</u> (Uref)	<u>Expanded</u> <u>Uncertainty</u> (Ulab)	<u>Lab Mean</u> (Xlab)	<u>Performance</u> <u>Statistic (En1)</u>	<u>Lab Mean</u> (Xlab)	<u>Performance</u> <u>Statistic (En2)</u>	<u>Instrument</u>
T2QW8Y		0.00004	0.00015	0.37460	0.00	0.37500	0.00	Micrometer
UTQW9X		0.00004	0.00030	0.37450	-0.33	0.37490	-0.33	Micrometer
XA82A8	X	0.00004	0.00005	L 0.37434	-4.21	0.37478	-3.56	Micrometer
XMTGBL		0.00004	0.00030	0.37455	-0.17	0.37495	-0.17	Micrometer
Y98K9U		0.00004	0.00116	0.37440	-0.17	0.37490	-0.09	Caliper
YCRDKW		0.00004	0.00100	0.37420	-0.40	0.37400	-1.00	Caliper

Summary Statistics

	<u>Sample I15</u>	<u>Sample I16</u>
Reference Uncertainty = 0.00004 in.	<u>Reference Diameters:</u> 0.3746 inch	0.3750 inch

Samples I15, I16 : 52100 Steel, 52100 Steel





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1101

1st Qtr 2026

Tensile Strength: Lab-Machined Flat Aluminum ASTM B557

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3AMZ47		48.66	0.29	0.62	48.11	-0.26	-0.46
3H4M43		49.10	0.73	1.57	48.70	0.33	0.60
469PQ3		48.30	-0.07	-0.15	48.30	-0.07	-0.12
4FR8A2		48.47	0.10	0.22	48.67	0.30	0.54
4RJNBV	X	44.69	-3.68	-7.89	45.08	-3.29	-5.87
4WXN62		48.10	-0.27	-0.58	49.10	0.73	1.31
6PFKNR	X	50.10	1.73	3.71	50.10	1.73	3.10
6WEXUL		48.15	-0.22	-0.46	48.01	-0.36	-0.64
6WZEAP		48.17	-0.20	-0.43	48.11	-0.26	-0.46
73XMTW		48.40	0.03	0.07	47.70	-0.67	-1.19
7V3LRB	X	43.35	-5.02	-10.75	43.88	-4.49	-8.02
7ZQ6V2		48.20	-0.17	-0.36	47.60	-0.77	-1.37
82488R		48.70	0.33	0.71	49.15	0.78	1.40
8FYNWP	X	50.20	1.83	3.92	48.00	-0.37	-0.65
8JYYRP		48.70	0.33	0.71	49.50	1.13	2.02
93TTJF		48.00	-0.37	-0.79	47.97	-0.39	-0.71
99GHVC		49.10	0.73	1.57	48.70	0.33	0.60
9MEQCQ		48.40	0.03	0.07	48.00	-0.37	-0.65
9RRHRJ		47.66	-0.71	-1.52	47.60	-0.76	-1.37
AHD63Y		49.40	1.03	2.21	49.10	0.73	1.31
ARKWGV	X	49.50	1.13	2.42	48.10	-0.27	-0.48
AV4NTX		47.58	-0.79	-1.69	47.58	-0.79	-1.40
B9NQNV		48.14	-0.23	-0.50	48.21	-0.15	-0.28
BTAGMR		47.80	-0.57	-1.22	47.80	-0.57	-1.01
BWUAYU		48.80	0.43	0.92	48.80	0.43	0.77
CNK2A7		48.40	0.03	0.07	48.20	-0.17	-0.30
EJDLEL		48.80	0.43	0.92	48.10	-0.27	-0.48
EMXDPN		48.30	-0.07	-0.15	48.20	-0.17	-0.30
F6MB6L		48.40	0.03	0.07	48.50	0.13	0.24
F7JQGJ		47.95	-0.42	-0.91	47.87	-0.49	-0.88
F9VAQF		48.20	-0.17	-0.36	48.10	-0.27	-0.48
FA3LHP		48.60	0.23	0.50	48.60	0.23	0.42
FP49WY		49.00	0.63	1.35	49.10	0.73	1.31
H7YQM6		48.00	-0.37	-0.79	48.10	-0.27	-0.48
H93HGE	*	48.59	0.22	0.47	47.44	-0.92	-1.65
HQPP4C		48.30	-0.07	-0.15	47.90	-0.47	-0.83
J6VNZK		48.20	-0.17	-0.36	49.10	0.73	1.31
JDG76G		48.40	0.03	0.07	47.80	-0.57	-1.01
JPN6NN		48.70	0.33	0.71	49.40	1.03	1.85
JZPJVF		48.40	0.03	0.07	48.30	-0.07	-0.12
K7L8GC		48.46	0.09	0.19	48.50	0.14	0.25
L2DUMK		48.57	0.20	0.44	48.40	0.03	0.06
LD8BAZ		48.10	-0.27	-0.58	48.20	-0.17	-0.30
LQ9VNJ		48.50	0.13	0.28	48.50	0.13	0.24
MK3JJX		48.55	0.18	0.39	48.55	0.18	0.33
Q36TDD		48.80	0.43	0.92	48.40	0.03	0.06
QEL74U		49.00	0.63	1.35	49.00	0.63	1.13



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1101

1st Qtr 2026

Tensile Strength: Lab-Machined Flat Aluminum ASTM B557

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RTG8WL		48.60	0.23	0.50	48.60	0.23	0.42
RWKUW6	*	47.22	-1.15	-2.46	48.12	-0.24	-0.43
TGKDBC		48.50	0.13	0.28	49.30	0.93	1.67
TGPRVR		47.40	-0.97	-2.08	48.10	-0.27	-0.48
TN2WHH	*	49.40	1.03	2.21	49.80	1.43	2.56
TYF7WA		47.20	-1.17	-2.50	47.60	-0.77	-1.37
U8PUA9		48.60	0.23	0.50	49.50	1.13	2.02
UZTU9M		48.90	0.53	1.14	49.00	0.63	1.13
VENM7A		48.10	-0.27	-0.58	48.10	-0.27	-0.48
VKD884	X	44.90	-3.47	-7.43	47.10	-1.27	-2.26
VNCH44		48.20	-0.17	-0.36	48.30	-0.07	-0.12
WRR99Y		48.20	-0.17	-0.36	47.70	-0.67	-1.19
WWNWMMK		48.15	-0.22	-0.46	48.15	-0.21	-0.38
XA82A8	X	50.30	1.93	4.14	49.60	1.23	2.20
YK2QF8		47.80	-0.57	-1.22	47.80	-0.57	-1.01
YKKK6N		48.00	-0.37	-0.79	47.90	-0.47	-0.83
Z8DU3F		48.88	0.51	1.09	48.30	-0.07	-0.12
ZYY9VX		48.20	-0.17	-0.36	48.00	-0.37	-0.65

Summary Statistics

	Sample R15		Sample R16	
Grand Means	48.37	ksi	48.37	ksi
Stnd Dev Btwn Labs	0.47	ksi	0.56	ksi

Samples R15, R16 : 16G 6061-T6 (A), 14G 6061-T6 (B)

Statistics based on 58 of 65 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1102

1st Qtr 2026

Yield Strength: Lab-Machined Flat Aluminum ASTM B557

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3AMZ47		40.55	0.22	0.58	40.10	-0.26	-0.55
3H4M43		40.80	0.47	1.22	40.70	0.34	0.72
469PQ3		40.10	-0.23	-0.59	40.00	-0.36	-0.77
4FR8A2		40.50	0.17	0.45	40.80	0.44	0.93
4RJNBV	X	36.51	-3.82	-9.91	37.22	-3.15	-6.70
4WXN62		40.00	-0.33	-0.85	41.00	0.64	1.36
6PFKNR	X	41.70	1.37	3.56	41.60	1.24	2.64
6WEXUL		40.03	-0.30	-0.77	40.03	-0.33	-0.71
6WZEAP		39.68	-0.65	-1.68	40.05	-0.31	-0.67
73XMTW		40.40	0.07	0.19	39.90	-0.46	-0.99
7V3LRB	X	35.41	-4.92	-12.75	36.05	-4.31	-9.18
7ZQ6V2		40.20	-0.13	-0.33	39.80	-0.56	-1.20
82488R		41.00	0.67	1.74	40.55	0.19	0.40
8FYNWP	X	41.50	1.17	3.04	39.10	-1.26	-2.69
8JYYRP		40.40	0.07	0.19	41.30	0.94	2.00
93TTJF		39.39	-0.94	-2.43	39.61	-0.75	-1.60
99GHVC		40.10	-0.23	-0.59	40.40	0.04	0.08
9MEQCQ		40.27	-0.06	-0.15	40.04	-0.32	-0.69
9RRHRJ		39.76	-0.57	-1.49	39.54	-0.83	-1.76
AHD63Y		40.70	0.37	0.96	40.70	0.34	0.72
ARKWGV	*	41.10	0.77	2.00	40.00	-0.36	-0.77
AV4NTX		40.41	0.08	0.21	40.22	-0.14	-0.31
B9NQNV		39.93	-0.39	-1.02	40.15	-0.21	-0.45
BTAGMR		40.00	-0.33	-0.85	40.10	-0.26	-0.56
BWUAYU		40.50	0.17	0.45	40.70	0.34	0.72
CNK2A7		40.20	-0.13	-0.33	40.30	-0.06	-0.13
EJDLEL		40.60	0.27	0.71	40.10	-0.26	-0.56
EMXDPN		40.10	-0.23	-0.59	40.30	-0.06	-0.13
F6MB6L		40.30	-0.03	-0.07	40.80	0.44	0.93
F7JQGJ	X	47.85	7.52	19.51	47.89	7.53	16.05
F9VAQF		40.20	-0.13	-0.33	40.10	-0.26	-0.56
FA3LHP		40.50	0.17	0.45	40.40	0.04	0.08
FP49WY		40.90	0.57	1.48	40.90	0.54	1.14
H7YQM6		40.20	-0.13	-0.33	40.40	0.04	0.08
H93HGE		40.21	-0.12	-0.32	39.44	-0.93	-1.97
HQPP4C		40.20	-0.13	-0.33	39.80	-0.56	-1.20
J6VNZK		40.20	-0.13	-0.33	40.80	0.44	0.93
JDG76G		40.60	0.27	0.71	40.60	0.24	0.50
JPN6NN		40.60	0.27	0.71	41.20	0.84	1.78
JZPJVF		40.40	0.07	0.19	40.50	0.14	0.29
K7L8GC		40.61	0.29	0.74	40.81	0.44	0.95
L2DUMK		40.19	-0.14	-0.36	40.36	0.00	0.00
LD8BAZ		40.50	0.17	0.45	40.60	0.24	0.50
LQ9VNJ		40.40	0.07	0.19	40.50	0.14	0.29
MK3JJX	X	38.55	-1.78	-4.61	39.55	-0.81	-1.73
Q36TDD		40.80	0.47	1.22	40.60	0.24	0.50
QEL74U		40.70	0.37	0.96	40.70	0.34	0.72



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1102

1st Qtr 2026

**Yield Strength: Lab-Machined Flat Aluminum
ASTM B557**

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RTG8WL		40.80	0.47	1.22	40.70	0.34	0.72
RWKUW6	X	42.69	2.36	6.12	43.86	3.49	7.44
TGKDBC		40.40	0.07	0.19	40.80	0.44	0.93
TGPRVR		39.60	-0.73	-1.89	40.10	-0.26	-0.56
TN2WHH		41.00	0.67	1.74	41.10	0.74	1.57
TYF7WA		39.60	-0.73	-1.89	39.80	-0.56	-1.20
U8PUA9	*	40.40	0.07	0.19	41.40	1.04	2.21
UZTU9M		41.00	0.67	1.74	41.20	0.84	1.78
VENM7A		40.10	-0.23	-0.59	40.20	-0.16	-0.35
VKD884	X	36.90	-3.43	-8.89	38.50	-1.86	-3.97
VNCH44		40.40	0.07	0.19	40.30	-0.06	-0.13
WRR99Y		40.40	0.07	0.19	40.00	-0.36	-0.77
WWNWMK		40.18	-0.15	-0.39	40.18	-0.19	-0.40
XA82A8	X	43.60	3.27	8.49	42.70	2.34	4.98
YK2QF8		39.80	-0.53	-1.37	39.80	-0.56	-1.20
YKKK6N		39.90	-0.43	-1.11	39.90	-0.46	-0.99
Z8DU3F		40.76	0.43	1.11	40.47	0.10	0.22
ZYY9VX		39.80	-0.53	-1.37	39.50	-0.86	-1.84

Summary Statistics

	Sample R15		Sample R16	
Grand Means	40.33	ksi	40.36	ksi
Stnd Dev Btwn Labs	0.39	ksi	0.47	ksi

Samples R15, R16 : 16G 6061-T6 (A), 14G 6061-T6 (B)

Statistics based on 56 of 65 reporting participants



Analysis 1102

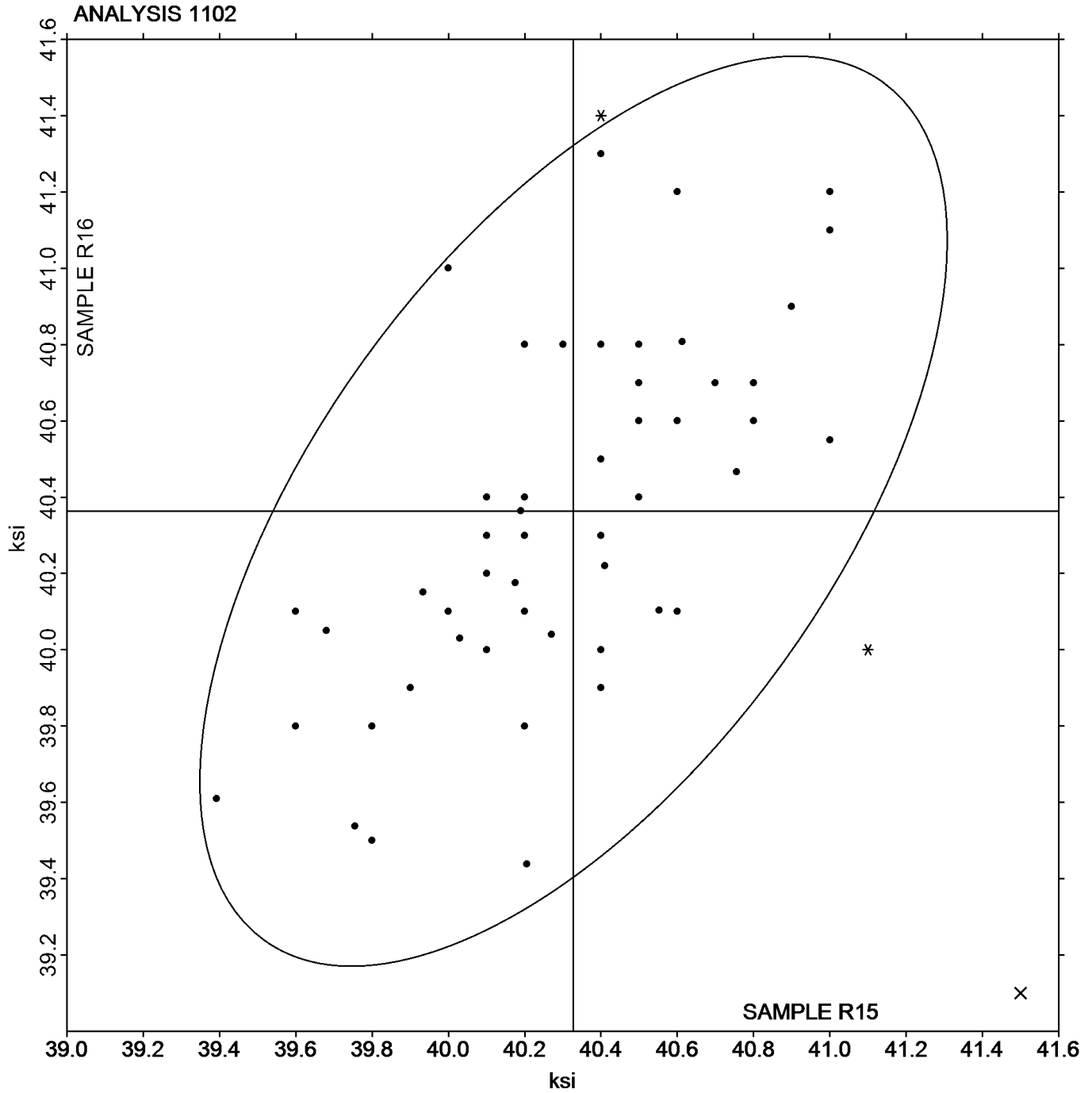
Yield Strength: Lab-Machined Flat Aluminum
ASTM B557

SAMPLE R15

SAMPLE R16

40.33 ksi

40.36 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1103

1st Qtr 2026

Elongation: Lab-Machined Flat Aluminum ASTM B557

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3AMZ47	*	13.90	-0.15	-0.17	13.00	-1.59	-1.83
3H4M43		14.70	0.65	0.75	14.80	0.21	0.24
469PQ3		14.50	0.45	0.52	15.00	0.41	0.47
4FR8A2		13.50	-0.55	-0.62	14.00	-0.59	-0.68
4RJNBV		15.60	1.55	1.77	16.40	1.81	2.07
4WXN62		14.00	-0.05	-0.05	15.00	0.41	0.47
6PFKNR	*	12.50	-1.55	-1.76	14.40	-0.19	-0.22
6WEXUL		15.90	1.85	2.12	15.60	1.01	1.15
6WZEAP		13.22	-0.83	-0.94	13.61	-0.98	-1.13
73XMTW		13.00	-1.05	-1.19	14.00	-0.59	-0.68
7V3LRB		15.30	1.25	1.43	15.20	0.61	0.70
7ZQ6V2		14.00	-0.05	-0.05	14.50	-0.09	-0.11
82488R		15.00	0.95	1.09	15.55	0.96	1.10
8FYNWP		13.70	-0.35	-0.39	14.60	0.01	0.01
8JYYRP	*	14.10	0.05	0.06	16.00	1.41	1.61
93TTJF		14.35	0.30	0.35	15.70	1.11	1.27
99GHVC		14.00	-0.05	-0.05	14.50	-0.09	-0.11
9MEQCQ		13.90	-0.15	-0.17	14.40	-0.19	-0.22
9RRHRJ		13.00	-1.05	-1.19	13.80	-0.79	-0.91
AHD63Y		15.00	0.95	1.09	15.70	1.11	1.27
ARKWGV		13.00	-1.05	-1.19	14.00	-0.59	-0.68
AV4NTX		14.10	0.05	0.06	14.45	-0.14	-0.16
B9NQNV		14.20	0.15	0.18	15.20	0.61	0.70
BTAGMR		14.20	0.15	0.18	14.70	0.11	0.12
BWUAYU		14.50	0.45	0.52	15.50	0.91	1.04
CNK2A7		14.20	0.15	0.18	14.90	0.31	0.35
EJDLEL		14.00	-0.05	-0.05	14.50	-0.09	-0.11
EMXDPN		15.00	0.95	1.09	15.00	0.41	0.47
F6MB6L		13.00	-1.05	-1.19	13.00	-1.59	-1.83
F7JQGJ	X	16.86	2.81	3.21	18.01	3.42	3.92
F9VAQF		14.80	0.75	0.86	15.50	0.91	1.04
FA3LHP		14.00	-0.05	-0.05	14.50	-0.09	-0.11
FP49WY		14.70	0.65	0.75	15.20	0.61	0.70
H7YQM6		14.60	0.55	0.63	15.30	0.71	0.81
H93HGE		12.00	-2.05	-2.33	13.00	-1.59	-1.83
HQPP4C		14.70	0.65	0.75	16.00	1.41	1.61
J6VNZK		14.50	0.45	0.52	14.50	-0.09	-0.11
JDG76G		13.00	-1.05	-1.19	13.10	-1.49	-1.71
JPN6NN		13.50	-0.55	-0.62	13.50	-1.09	-1.25
JZPJVF		14.70	0.65	0.75	15.10	0.51	0.58
K7L8GC		13.26	-0.79	-0.90	14.08	-0.51	-0.59
L2DUMK		14.70	0.65	0.75	15.60	1.01	1.15
LD8BAZ		15.10	1.05	1.20	16.10	1.51	1.73
LQ9VNJ		14.00	-0.05	-0.05	15.00	0.41	0.47
MK3JJX		14.00	-0.05	-0.05	13.50	-1.09	-1.25
Q36TDD		13.50	-0.55	-0.62	13.50	-1.09	-1.25
QEL74U		13.50	-0.55	-0.62	14.50	-0.09	-0.11



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1103

1st Qtr 2026

Elongation: Lab-Machined Flat Aluminum ASTM B557

WebCode	Data Flag	Sample R15			Sample R16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RTG8WL		12.60	-1.45	-1.65	13.20	-1.39	-1.60
RWKUW6		13.14	-0.90	-1.03	13.52	-1.08	-1.23
TGKDBC		14.00	-0.05	-0.05	15.00	0.41	0.47
TGPRVR		13.50	-0.55	-0.62	14.50	-0.09	-0.11
TN2WHH	X	17.00	2.95	3.37	14.00	-0.59	-0.68
TYF7WA		14.00	-0.05	-0.05	14.80	0.21	0.24
U8PUA9		15.00	0.95	1.09	15.00	0.41	0.47
UZTU9M	*	12.00	-2.05	-2.33	13.50	-1.09	-1.25
VENM7A		14.16	0.11	0.13	14.48	-0.11	-0.13
VKD884		15.50	1.45	1.66	15.50	0.91	1.04
VNCH44		12.80	-1.25	-1.42	13.20	-1.39	-1.60
WRR99Y		14.90	0.85	0.97	14.40	-0.19	-0.22
WWNWMMK		14.50	0.45	0.52	15.20	0.61	0.70
XA82A8	X	6.000	-8.05	-9.18	7.000	-7.59	-8.71
YK2QF8		14.00	-0.05	-0.05	14.50	-0.09	-0.11
YKKK6N		13.40	-0.65	-0.74	14.00	-0.59	-0.68
Z8DU3F		13.50	-0.55	-0.62	13.40	-1.19	-1.37
ZYY9VX		15.90	1.85	2.12	15.60	1.01	1.15

Summary Statistics

	Sample R15		Sample R16	
Grand Means	14.05	Percent	14.59	Percent
Stnd Dev Btwn Labs	0.88	Percent	0.87	Percent

Samples R15, R16 : 16G 6061-T6 (A), 14G 6061-T6 (B)

Statistics based on 62 of 65 reporting participants



Analysis 1103

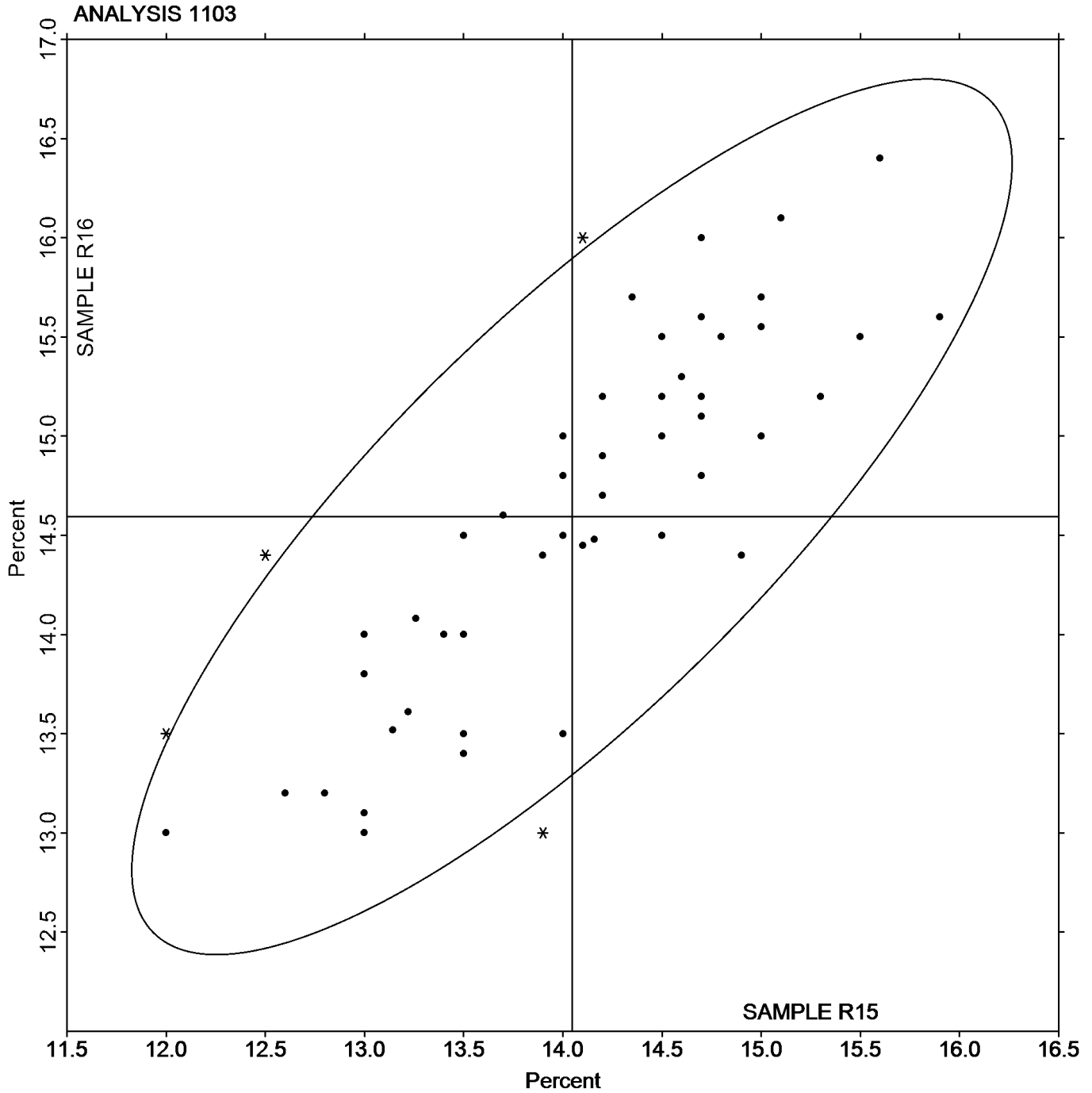
Elongation: Lab-Machined Flat Aluminum
ASTM B557

SAMPLE R15

14.05 Percent

SAMPLE R16

14.59 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1111

1st Qtr 2026

Tensile Strength: Pre-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample A15			Sample A16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2LP44V		68.10	0.52	0.64	75.10	0.63	0.83
344NDK		68.00	0.42	0.52	74.80	0.33	0.43
3FF3KD		67.10	-0.48	-0.58	74.30	-0.17	-0.22
3JJZUK		67.30	-0.28	-0.34	74.55	0.08	0.11
3KVICYG	X	74.80	7.22	8.81	74.30	-0.17	-0.22
437VV7		67.50	-0.08	-0.09	74.30	-0.17	-0.22
4UA3KR		66.92	-0.66	-0.81	74.05	-0.42	-0.55
62MBLT	X	68.66	1.08	1.32	68.76	-5.71	-7.48
7VUQX4		67.99	0.41	0.50	74.92	0.45	0.59
8QLFTF	*	65.90	-1.68	-2.05	74.80	0.33	0.43
99GHVC		67.50	-0.08	-0.09	74.50	0.03	0.04
99WYQ6		67.00	-0.58	-0.70	74.50	0.03	0.04
9MEQCQ		69.10	1.52	1.86	76.20	1.73	2.27
A3PH6N		68.22	0.64	0.79	74.75	0.28	0.37
AL6VXE		67.88	0.30	0.37	74.99	0.52	0.68
B7Z64K		67.10	-0.48	-0.58	73.80	-0.67	-0.88
BJRHTH		67.28	-0.29	-0.36	75.48	1.01	1.32
BPEE9R		67.01	-0.57	-0.70	73.97	-0.50	-0.65
BTJZ9B		68.00	0.42	0.52	74.50	0.03	0.04
CLPRQN		68.60	1.02	1.25	73.90	-0.57	-0.75
CREYLQ		67.24	-0.34	-0.41	73.79	-0.68	-0.90
DDB3QV	*	65.70	-1.88	-2.29	74.30	-0.17	-0.22
EBL8P9		68.90	1.32	1.61	75.70	1.23	1.61
F6V7YT		67.90	0.32	0.39	74.70	0.23	0.30
F9UGUT		67.70	0.12	0.15	74.40	-0.07	-0.09
FAH63M		66.50	-1.08	-1.32	72.90	-1.57	-2.06
GAK3Y4		69.04	1.46	1.78	75.86	1.39	1.82
GLX6K3		67.73	0.16	0.19	74.80	0.33	0.43
JRB88G		68.93	1.35	1.65	74.57	0.11	0.14
JVPGKK		66.40	-1.18	-1.44	73.00	-1.47	-1.93
K8GQHD		67.00	-0.58	-0.70	72.80	-1.67	-2.19
KUZLLJ		67.59	0.01	0.01	74.70	0.23	0.30
P7ECA3		68.60	1.02	1.25	75.30	0.83	1.09
PCJ9T3		68.60	1.02	1.25	75.60	1.13	1.48
QEL74U		67.50	-0.08	-0.09	74.00	-0.47	-0.62
RYNPHU		68.10	0.52	0.64	75.00	0.53	0.69
UEUHCA		67.48	-0.10	-0.12	73.98	-0.49	-0.64
UWTL2R		66.90	-0.68	-0.83	73.90	-0.57	-0.75
WFYZAW		67.80	0.22	0.27	74.80	0.33	0.43
YCRDKW		67.00	-0.58	-0.70	73.50	-0.97	-1.27
YJP6TQ		66.40	-1.18	-1.44	73.90	-0.57	-0.75
ZWRQX2		67.60	0.02	0.03	73.90	-0.57	-0.75



Summary Statistics

	<u>Sample A15</u>		<u>Sample A16</u>	
Grand Means	67.58	ksi	74.47	ksi
Stnd Dev Btwn Labs	0.82	ksi	0.76	ksi

Samples A15, A16 : AISI 1018 (S), AISI 1018 (L)

Statistics based on 40 of 42 reporting participants



Analysis 1111

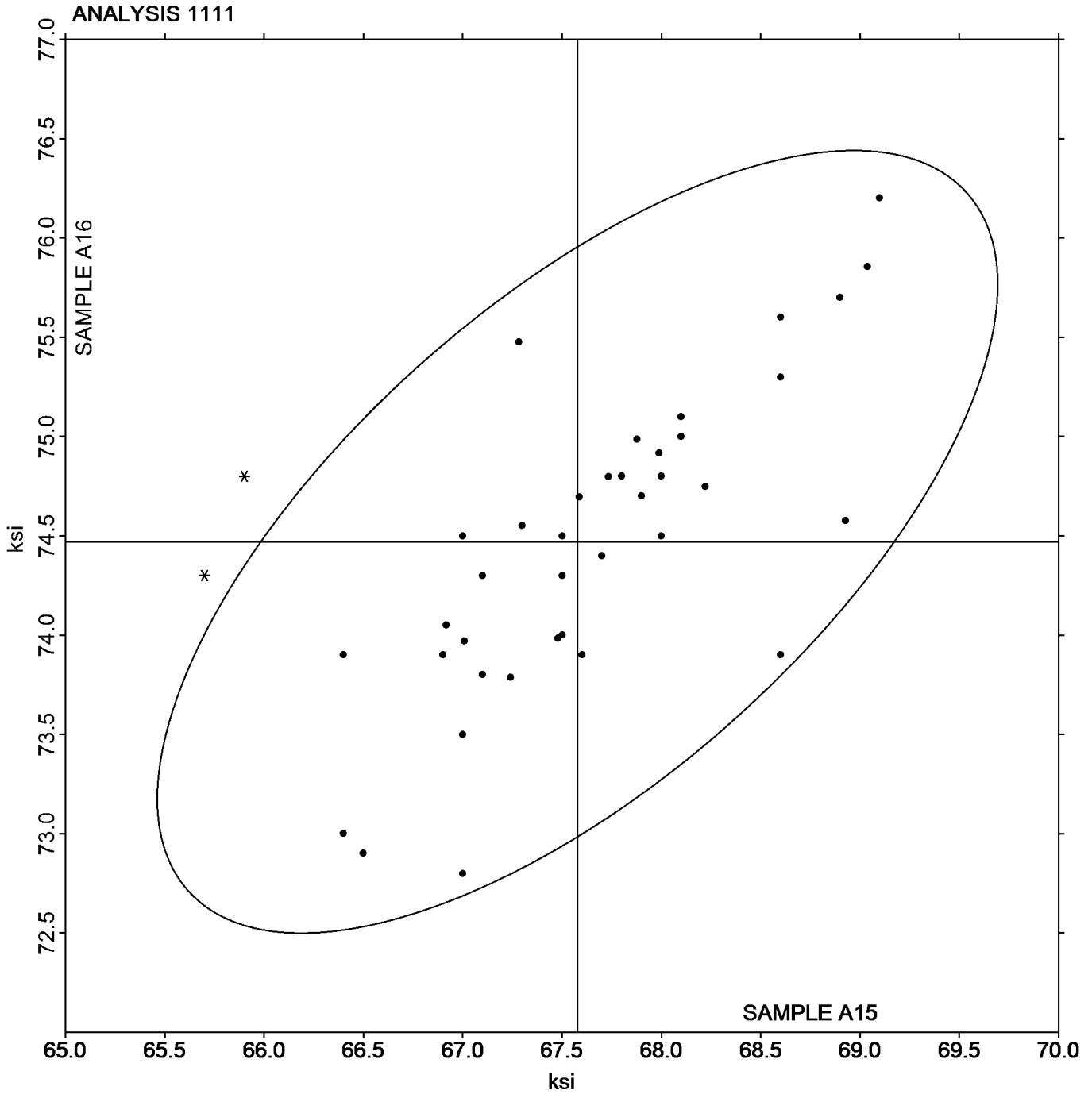
Tensile Strength: Pre-Machined Round Steel
ASTM E8

SAMPLE A15

SAMPLE A16

67.58 ksi

74.47 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1112

1st Qtr 2026

Yield Strength: Pre-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample A15			Sample A16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2LP44V		46.00	2.07	0.77	52.80	4.00	1.45
344NDK		43.00	-0.93	-0.34	48.90	0.10	0.04
3FF3KD		41.00	-2.93	-1.08	47.10	-1.70	-0.61
3JJZUK		45.25	1.33	0.49	52.07	3.27	1.19
3KVICYG	M	No Data Reported			54.10	5.30	1.92
437VV7		48.50	4.57	1.69	50.50	1.70	0.62
4UA3KR		43.20	-0.72	-0.27	47.60	-1.20	-0.43
62MBLT	*	43.13	-0.79	-0.29	43.24	-5.56	-2.01
7VUQX4		47.20	3.27	1.21	51.35	2.55	0.92
8QLFTF	*	43.60	-0.33	-0.12	54.40	5.60	2.03
99GHVC		48.50	4.57	1.69	52.50	3.70	1.34
99WYQ6		42.00	-1.93	-0.71	46.40	-2.40	-0.87
9MEQCQ		43.40	-0.53	-0.19	51.00	2.20	0.80
A3PH6N		37.55	-6.37	-2.36	44.37	-4.42	-1.60
AL6VXE		43.08	-0.85	-0.31	47.28	-1.51	-0.55
B7Z64K		46.20	2.27	0.84	49.50	0.70	0.25
BJRHTH		46.76	2.84	1.05	52.35	3.56	1.29
BPEE9R		41.48	-2.44	-0.90	46.56	-2.24	-0.81
BTJZ9B		45.20	1.27	0.47	49.60	0.80	0.29
CLPRQN		41.00	-2.93	-1.08	45.60	-3.20	-1.16
CREYLQ		45.24	1.32	0.49	52.84	4.04	1.46
DDB3QV		40.20	-3.73	-1.38	44.10	-4.70	-1.70
EBL8P9		44.60	0.67	0.25	49.04	0.24	0.09
F6V7YT		42.20	-1.73	-0.64	47.90	-0.90	-0.32
F9UGUT		45.80	1.87	0.69	48.30	-0.50	-0.18
FAH63M		42.45	-1.48	-0.55	47.30	-1.50	-0.54
GAK3Y4		44.24	0.31	0.12	48.88	0.08	0.03
GLX6K3		44.06	0.14	0.05	48.50	-0.30	-0.11
JRB88G		44.15	0.22	0.08	47.03	-1.77	-0.64
JVPGKK	*	39.50	-4.43	-1.64	49.40	0.60	0.22
K8GQHD		47.80	3.87	1.43	52.90	4.10	1.49
KUZLLJ		42.06	-1.86	-0.69	47.43	-1.37	-0.50
P7ECA3		42.10	-1.83	-0.68	46.90	-1.90	-0.69
PCJ9T3		42.10	-1.83	-0.68	47.40	-1.40	-0.51
QEL74U		49.00	5.07	1.88	53.00	4.20	1.52
RYNPHU		49.60	5.67	2.10	53.00	4.20	1.52
UEUHCA		40.48	-3.45	-1.28	46.42	-2.37	-0.86
UWTL2R		45.70	1.77	0.66	49.00	0.20	0.07
WFYZAW		43.10	-0.83	-0.31	47.50	-1.30	-0.47
YCRDKW		45.10	1.17	0.43	48.20	-0.60	-0.22
YJP6TQ		43.30	-0.63	-0.23	47.00	-1.80	-0.65
ZWRQX2		42.10	-1.83	-0.68	45.50	-3.30	-1.19



Summary Statistics

	<u>Sample A15</u>		<u>Sample A16</u>	
Grand Means	43.93	ksi	48.80	ksi
Stnd Dev Btwn Labs	2.70	ksi	2.76	ksi

Samples A15, A16 : AISI 1018 (S), AISI 1018 (L)

Statistics based on 41 of 42 reporting participants



Analysis 1112

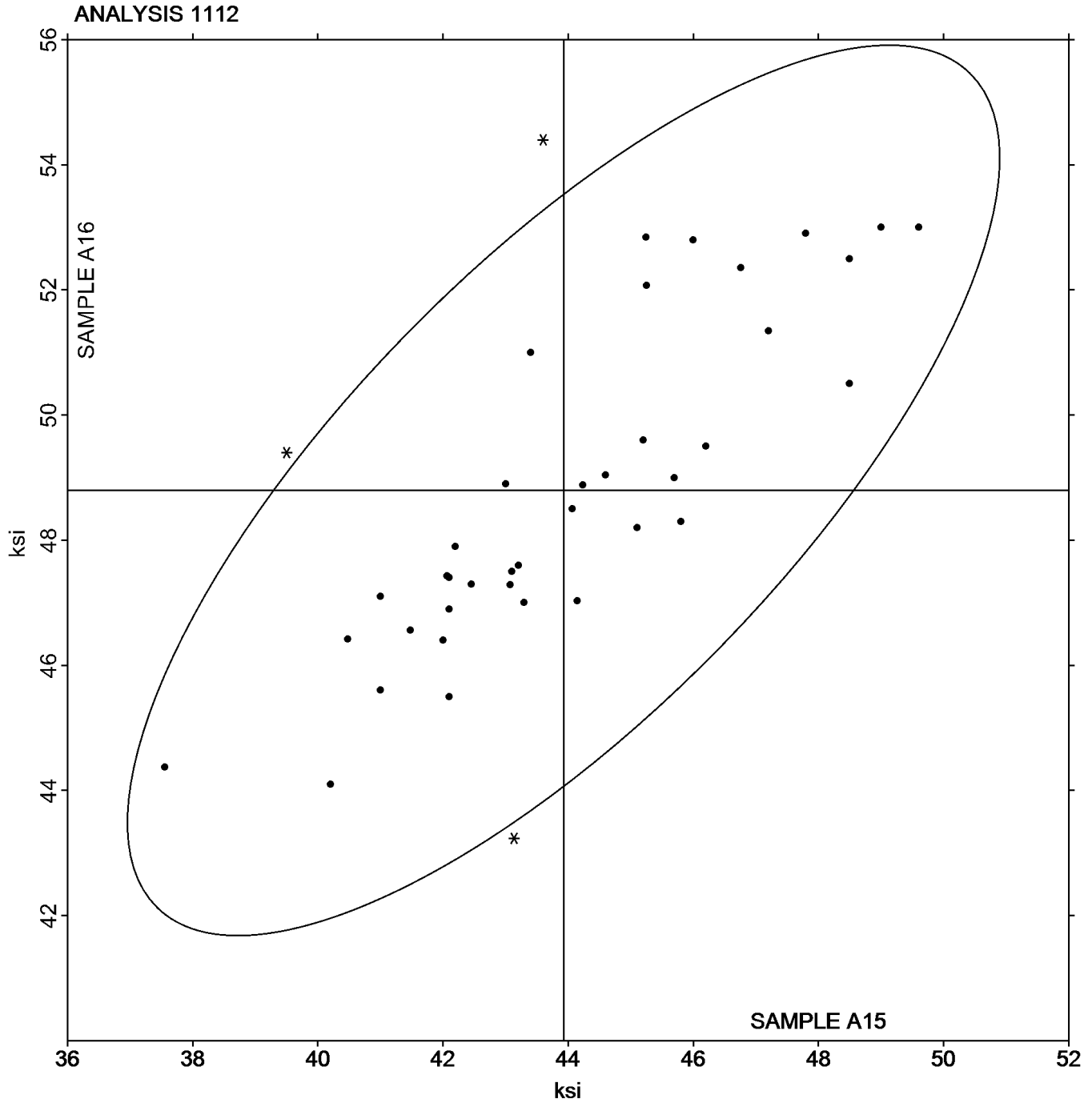
Yield Strength: Pre-Machined Round Steel
ASTM E8

SAMPLE A15

SAMPLE A16

43.93 ksi

48.80 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1113

1st Qtr 2026

Elongation: Pre-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample A15			Sample A16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2LP44V		37.00	1.49	1.49	33.00	0.25	0.32
344NDK		34.80	-0.71	-0.72	32.30	-0.45	-0.58
3FF3KD		33.80	-1.71	-1.72	32.54	-0.21	-0.27
3JJZUK		36.00	0.49	0.49	33.00	0.25	0.32
3KVICYG		33.80	-1.71	-1.72	32.20	-0.55	-0.71
437VV7		36.00	0.49	0.49	32.50	-0.25	-0.33
4UA3KR		35.57	0.05	0.05	32.16	-0.59	-0.77
62MBLT	X	35.68	0.17	0.17	37.78	5.03	6.52
7VUQX4		35.90	0.39	0.39	32.00	-0.75	-0.97
8QLFTF		36.50	0.99	0.99	33.60	0.85	1.10
99GHVC		34.00	-1.51	-1.52	32.00	-0.75	-0.97
99WYQ6		35.00	-0.51	-0.52	33.00	0.25	0.32
9MEQCQ		35.20	-0.31	-0.32	32.30	-0.45	-0.58
A3PH6N		36.64	1.13	1.13	33.68	0.93	1.20
AL6VXE		36.00	0.49	0.49	32.00	-0.75	-0.97
B7Z64K		36.50	0.99	0.99	33.80	1.05	1.36
BJRHTH		35.50	-0.01	-0.01	33.00	0.25	0.32
BPEE9R		35.60	0.09	0.09	32.70	-0.05	-0.07
BTJZ9B		34.00	-1.51	-1.52	33.00	0.25	0.32
CLPRQN		36.30	0.79	0.79	33.40	0.65	0.84
CREYLQ		35.55	0.04	0.04	31.85	-0.90	-1.17
DDB3QV	*	36.40	0.89	0.89	31.46	-1.29	-1.67
EBL8P9		34.40	-1.11	-1.12	32.50	-0.25	-0.33
F6V7YT		34.80	-0.71	-0.72	32.30	-0.45	-0.58
F9UGUT		34.00	-1.51	-1.52	31.50	-1.25	-1.62
FAH63M		37.02	1.51	1.51	33.91	1.16	1.50
GAK3Y4		36.00	0.49	0.49	33.00	0.25	0.32
GLX6K3		35.20	-0.31	-0.32	31.60	-1.15	-1.49
JRB88G		34.95	-0.56	-0.57	32.50	-0.25	-0.33
JVPGKK		36.50	0.99	0.99	34.20	1.45	1.88
K8GQHD		35.20	-0.31	-0.32	32.60	-0.15	-0.20
KUZLLJ		35.30	-0.21	-0.21	32.20	-0.55	-0.71
P7ECA3		35.30	-0.21	-0.21	34.30	1.55	2.01
PCJ9T3	*	37.80	2.29	2.29	34.80	2.05	2.66
QEL74U		34.00	-1.51	-1.52	33.00	0.25	0.32
RYNPHU		36.00	0.49	0.49	32.90	0.15	0.19
UEUHCA		34.65	-0.86	-0.87	31.95	-0.80	-1.04
UWTL2R		35.70	0.19	0.19	32.70	-0.05	-0.07
WFYZAW		34.70	-0.81	-0.82	32.90	0.15	0.19
YCRDKW		37.00	1.49	1.49	33.00	0.25	0.32
YJP6TQ		36.00	0.49	0.49	32.70	-0.05	-0.07
ZWRQX2	X	37.00	1.49	1.49	30.00	-2.75	-3.57



Summary Statistics

	<u>Sample A15</u>		<u>Sample A16</u>	
Grand Means	35.51	Percent	32.75	Percent
Stnd Dev Btwn Labs	1.00	Percent	0.77	Percent

Samples A15, A16 : AISI 1018 (S), AISI 1018 (L)

Statistics based on 40 of 42 reporting participants



Analysis 1113

Elongation: Pre-Machined Round Steel

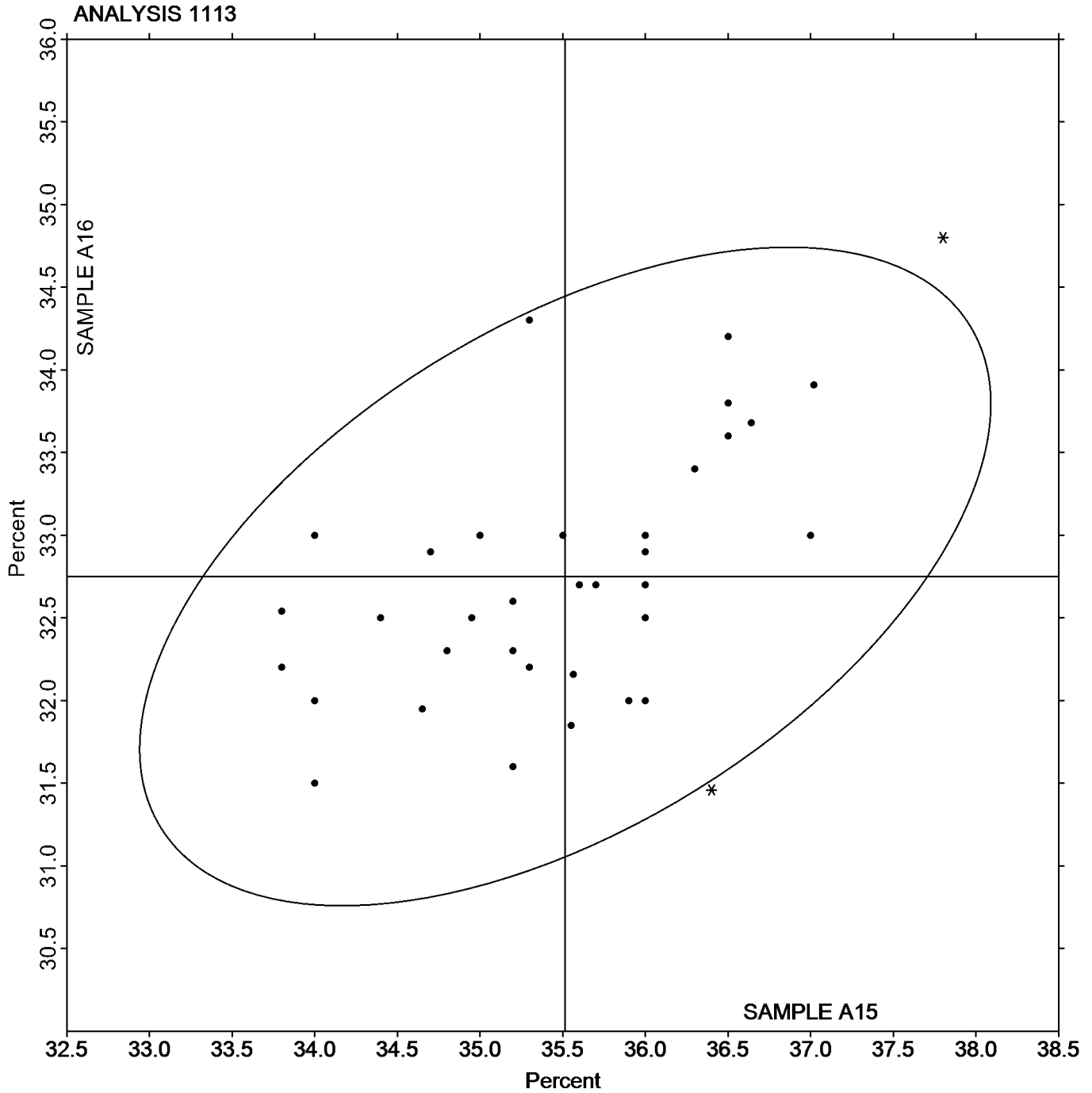
ASTM E8

SAMPLE A15

35.51 Percent

SAMPLE A16

32.75 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1114

1st Qtr 2026

Reduction of Area: Pre-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample A15			Sample A16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2LP44V		68.00	-0.64	-0.63	64.00	-0.26	-0.24
344NDK		67.90	-0.74	-0.72	63.20	-1.06	-0.98
3FF3KD		68.80	0.16	0.16	62.81	-1.45	-1.35
3JJZUK		69.00	0.36	0.35	64.00	-0.26	-0.24
3KV CYG		68.20	-0.44	-0.43	61.90	-2.36	-2.20
437VV7		68.50	-0.14	-0.14	64.10	-0.16	-0.15
4UA3KR		68.79	0.16	0.15	64.36	0.10	0.09
62MBLT	X	64.19	-4.45	-4.36	63.59	-0.67	-0.62
7VUQX4		68.90	0.26	0.26	63.80	-0.46	-0.43
8QLFTF	*	65.70	-2.94	-2.88	63.30	-0.96	-0.89
99GHVC		68.00	-0.64	-0.63	65.00	0.74	0.69
99WYQ6		70.00	1.36	1.33	65.00	0.74	0.69
9MEQCQ		67.90	-0.74	-0.72	65.00	0.74	0.69
A3PH6N		68.75	0.11	0.11	63.36	-0.90	-0.84
AL6VXE		69.00	0.36	0.35	64.00	-0.26	-0.24
B7Z64K		68.30	-0.34	-0.33	65.00	0.74	0.69
BJRHTH		69.30	0.66	0.65	64.40	0.14	0.13
BPEE9R		70.10	1.46	1.43	65.00	0.74	0.69
BTJZ9B		69.00	0.36	0.35	65.00	0.74	0.69
CLPRQN		68.90	0.26	0.26	64.90	0.64	0.60
CREYLQ		69.00	0.36	0.35	65.00	0.74	0.69
DDB3QV	*	68.08	-0.56	-0.55	61.44	-2.82	-2.62
EBL8P9	*	65.70	-2.94	-2.88	64.10	-0.16	-0.15
F6V7YT		69.37	0.73	0.72	64.47	0.21	0.20
F9UGUT	*	67.60	-1.04	-1.02	61.40	-2.86	-2.66
FAH63M	X	65.30	-3.34	-3.27	68.90	4.64	4.32
GAK3Y4		70.00	1.36	1.33	65.00	0.74	0.69
GLX6K3		69.30	0.66	0.65	64.50	0.24	0.23
JRB88G		69.77	1.13	1.11	66.53	2.27	2.12
JVPGKK		68.20	-0.44	-0.43	63.50	-0.76	-0.71
K8GQHD		69.70	1.06	1.04	64.60	0.34	0.32
KUZLLJ		68.20	-0.44	-0.43	63.80	-0.46	-0.43
P7ECA3		67.80	-0.84	-0.82	64.80	0.54	0.51
PCJ9T3		69.70	1.06	1.04	66.10	1.84	1.72
QEL74U		67.00	-1.64	-1.61	65.00	0.74	0.69
RYNPHU		68.10	-0.54	-0.53	64.40	0.14	0.13
UEUHCA		68.57	-0.07	-0.07	64.57	0.31	0.29
UWTL2R		69.70	1.06	1.04	65.10	0.84	0.78
WFYZAW		69.20	0.56	0.55	64.90	0.64	0.60
YCRDKW		69.00	0.36	0.35	64.00	-0.26	-0.24
YJP6TQ		69.90	1.26	1.23	64.70	0.44	0.41



Summary Statistics

	<u>Sample A15</u>		<u>Sample A16</u>	
Grand Means	68.64	Percent	64.26	Percent
Stnd Dev Btwn Labs	1.02	Percent	1.07	Percent

Samples A15, A16 : AISI 1018 (S), AISI 1018 (L)

Statistics based on 39 of 41 reporting participants



Analysis 1114

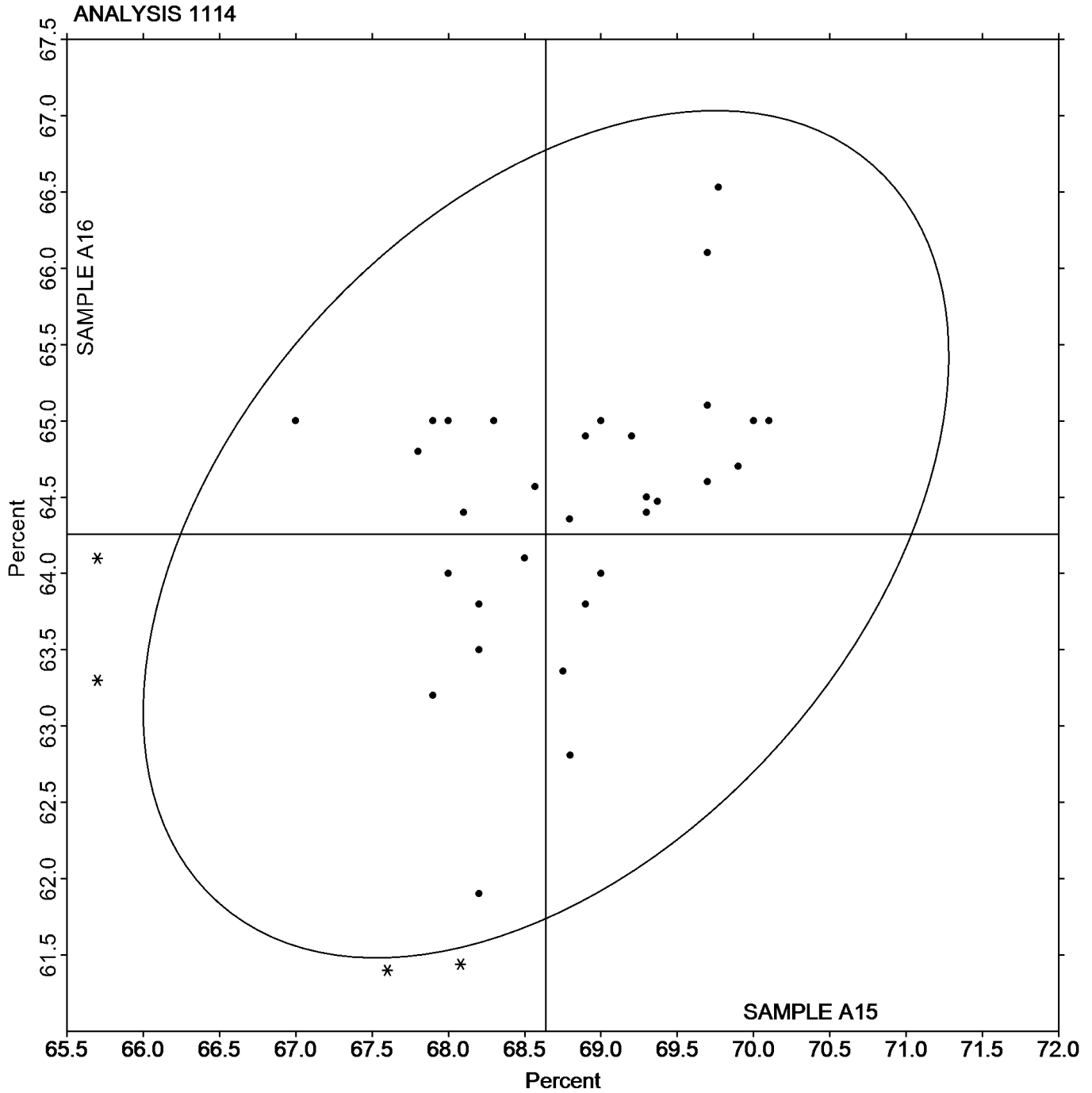
Reduction of Area: Pre-Machined Round Steel
ASTM E8

SAMPLE A15

68.64 Percent

SAMPLE A16

64.26 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1121

1st Qtr 2026

Tensile Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL		66.80	-0.67	-0.86	74.50	0.37	0.37
2FFWEQ	X	67.44	-0.03	-0.03	71.50	-2.63	-2.66
2MGXTY		67.10	-0.37	-0.48	72.80	-1.33	-1.35
2UJXHT		66.85	-0.62	-0.80	73.02	-1.11	-1.13
39E2VJ	*	69.60	2.13	2.75	75.90	1.77	1.79
3JEF7G		67.10	-0.37	-0.48	74.70	0.57	0.57
4R6BVY		68.20	0.73	0.94	74.20	0.07	0.07
4RJNBV		66.92	-0.55	-0.71	73.17	-0.96	-0.97
6C9FXY		66.60	-0.87	-1.12	72.50	-1.63	-1.66
6PB4PT		67.60	0.13	0.17	73.60	-0.53	-0.54
6ZYQ7P		67.40	-0.07	-0.09	73.49	-0.64	-0.65
89MC2D		67.50	0.03	0.04	74.10	-0.03	-0.03
8GTEZJ		68.39	0.92	1.19	75.72	1.59	1.61
93TTJF	X	45.30	-22.17	-28.63	49.97	-24.17	-24.49
9MEQCQ		67.80	0.33	0.43	73.90	-0.23	-0.24
9NUQX2		68.10	0.63	0.81	74.10	-0.03	-0.03
AHD63Y		67.20	-0.27	-0.35	75.50	1.37	1.39
BTH4YF		67.00	-0.47	-0.61	74.00	-0.13	-0.14
BWGGL6		66.60	-0.87	-1.12	74.30	0.17	0.17
BYKLL7		67.31	-0.16	-0.20	74.14	0.01	0.01
CHQD4Y		68.02	0.55	0.71	74.38	0.25	0.25
CKH4YD		67.60	0.13	0.17	74.70	0.57	0.57
CKMKXC		67.19	-0.28	-0.36	73.57	-0.56	-0.57
CNK2A7		68.65	1.18	1.53	76.35	2.21	2.24
D9KTGW		67.90	0.43	0.56	74.00	-0.13	-0.14
DPP3K4		68.02	0.55	0.71	74.99	0.85	0.86
DTNEG4		67.60	0.13	0.17	74.00	-0.13	-0.14
DTQ4KZ		68.20	0.73	0.94	74.70	0.57	0.57
DWA96G		67.88	0.41	0.53	73.97	-0.16	-0.17
E7QFGB		69.18	1.71	2.21	75.50	1.37	1.39
EAPQDB		67.49	0.02	0.02	74.21	0.07	0.07
EAQNN7		67.80	0.33	0.43	75.40	1.27	1.28
EYE2VA		67.89	0.42	0.54	74.92	0.78	0.79
G3PQD9		66.17	-1.30	-1.68	73.16	-0.98	-0.99
G8G8GM		66.00	-1.47	-1.90	72.70	-1.43	-1.45
GAK3Y4		68.60	1.13	1.46	76.58	2.45	2.48
H93HGE		67.19	-0.28	-0.37	73.11	-1.03	-1.04
HNGGWD		67.12	-0.35	-0.45	73.38	-0.76	-0.77
HUPZYC		66.00	-1.47	-1.90	73.80	-0.33	-0.34
J3EYC3		67.10	-0.37	-0.48	75.00	0.87	0.88
JDGJCA		66.86	-0.61	-0.79	74.28	0.15	0.15
JFGQHF		67.46	0.00	-0.01	73.41	-0.72	-0.73
JMF4NB		67.00	-0.47	-0.61	74.40	0.27	0.27
JPMLM7		68.60	1.13	1.46	75.90	1.77	1.79
JVU29N	X	58.66	-8.81	-11.38	64.77	-9.37	-9.49
KUD6FN		68.20	0.73	0.94	73.90	-0.23	-0.24
LD8BAZ	M	67.90	0.43	0.56	No Data Reported		



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1121

1st Qtr 2026

Tensile Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
LQWA3N		68.10	0.63	0.81	74.20	0.07	0.07
M4CR8C		68.00	0.53	0.68	74.42	0.29	0.29
MAFKEL		67.70	0.23	0.30	74.70	0.57	0.57
MC6ZUN		66.40	-1.07	-1.38	72.80	-1.33	-1.35
MH9VPG		67.17	-0.29	-0.38	73.37	-0.76	-0.77
MK3JJX		67.75	0.28	0.36	74.25	0.12	0.12
MWFTYB		67.20	-0.27	-0.35	73.20	-0.93	-0.95
NBTMM7		66.89	-0.58	-0.75	73.09	-1.05	-1.06
NJ8AZF	X	63.80	-3.67	-4.74	69.40	-4.73	-4.80
NTP32B		67.56	0.09	0.11	73.67	-0.46	-0.47
P66D3Z	*	65.57	-1.90	-2.45	73.20	-0.94	-0.95
P7ECA3		68.50	1.03	1.33	75.50	1.37	1.39
QEPN7Z		67.70	0.23	0.30	75.00	0.87	0.88
QWYYJH		66.83	-0.64	-0.83	72.94	-1.20	-1.21
RTXD86	*	68.20	0.73	0.94	72.90	-1.23	-1.25
RYNPHU		68.10	0.63	0.81	75.40	1.27	1.28
T698BV		66.20	-1.27	-1.64	73.40	-0.73	-0.74
U3GHFG		66.80	-0.67	-0.86	73.10	-1.03	-1.05
UDX2ZD		68.20	0.73	0.94	73.70	-0.43	-0.44
UEUHCA		67.34	-0.13	-0.17	73.54	-0.60	-0.60
UTQW9X		68.00	0.53	0.69	75.41	1.28	1.29
UVY742	X	70.70	3.23	4.17	63.80	-10.33	-10.47
V84RZY		67.08	-0.39	-0.50	73.22	-0.92	-0.93
VAY2L2		68.50	1.03	1.33	74.80	0.67	0.68
VFK3H7		66.90	-0.57	-0.74	72.90	-1.23	-1.25
VKCAYU		68.89	1.42	1.84	74.26	0.13	0.13
VWDNAR		67.10	-0.37	-0.48	74.50	0.37	0.37
WT9FHM		67.20	-0.27	-0.35	75.40	1.27	1.28
X7MAY6		67.00	-0.47	-0.61	72.80	-1.33	-1.35
X8JGRH		67.99	0.52	0.67	74.33	0.20	0.20
XA82A8		68.00	0.53	0.68	74.50	0.37	0.37
YCRDKW		66.00	-1.47	-1.90	73.00	-1.13	-1.15
YQ3ZMZ	X	68.88	1.41	1.82	72.63	-1.50	-1.52
YYMZFJ		68.00	0.53	0.68	76.10	1.97	1.99
ZBP32Y		66.80	-0.66	-0.86	73.14	-0.99	-1.00
ZEVEBL		67.00	-0.47	-0.61	75.00	0.87	0.88
ZTWWZZ		66.70	-0.77	-0.99	72.60	-1.53	-1.55

Summary Statistics

	Sample P15		Sample P16	
Grand Means	67.47	ksi	74.13	ksi
Std Dev Btwn Labs	0.77	ksi	0.99	ksi

Samples P15, P16 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 77 of 84 reporting participants



Analysis 1121

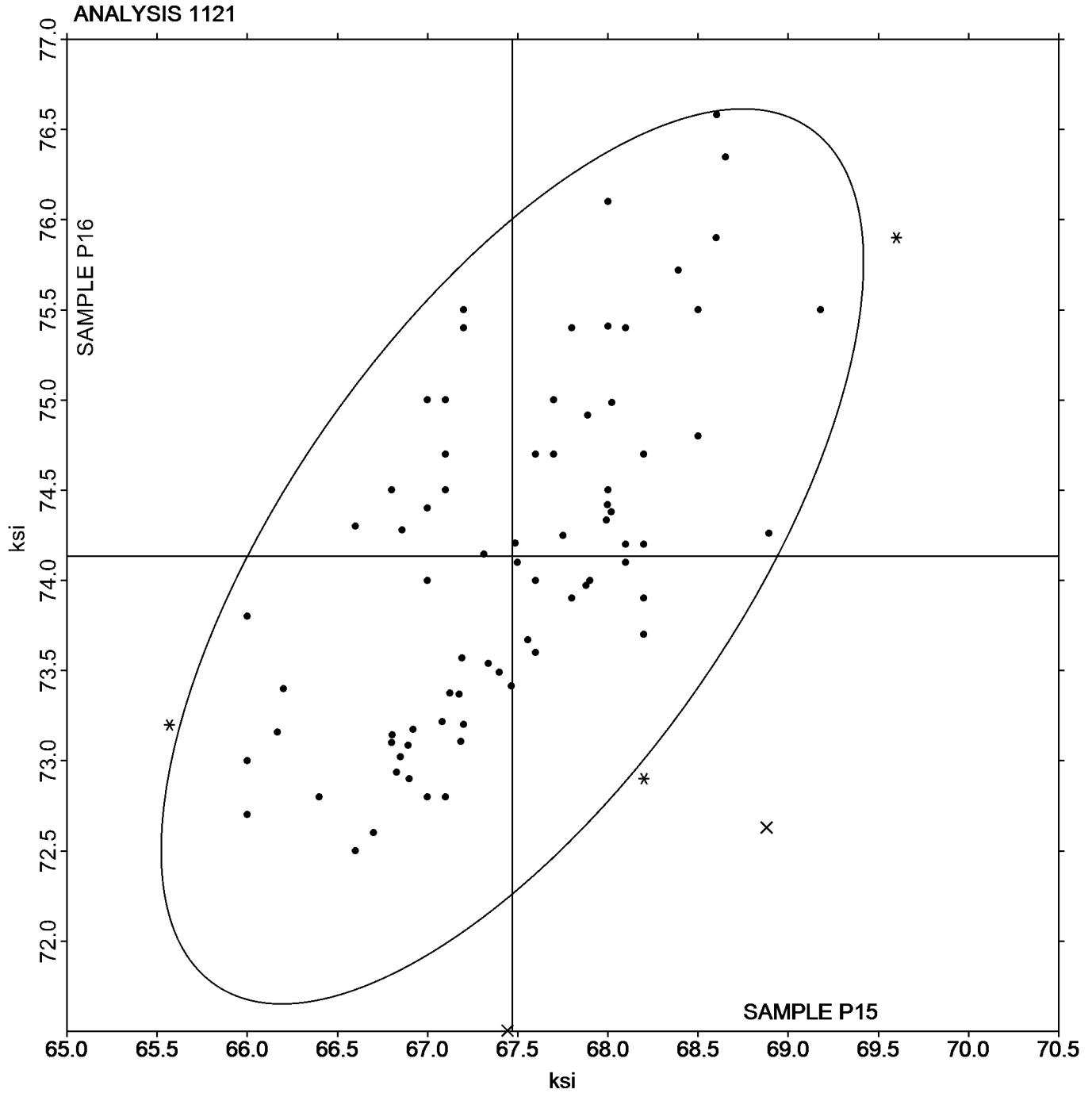
Tensile Strength: Lab-Machined Round Steel
ASTM E8

SAMPLE P15

67.47 ksi

SAMPLE P16

74.13 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1122

1st Qtr 2026

Yield Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL		41.00	-1.19	-0.45	47.60	-0.05	-0.02
2FFWEQ	X	39.89	-2.30	-0.86	39.31	-8.34	-2.99
2MGXTY		39.40	-2.79	-1.05	44.40	-3.25	-1.16
2UJXHT		41.37	-0.82	-0.31	45.66	-1.99	-0.71
39E2VJ		48.70	6.51	2.44	53.90	6.25	2.24
3JEF7G		48.60	6.41	2.40	54.10	6.45	2.31
4R6BVY		42.90	0.71	0.27	48.30	0.65	0.23
4RJNBV	X	40.76	-1.43	-0.54	53.07	5.42	1.94
6C9FXY		40.00	-2.19	-0.82	44.70	-2.95	-1.06
6PB4PT		41.77	-0.42	-0.16	47.01	-0.64	-0.23
6ZYQ7P		41.21	-0.98	-0.37	45.60	-2.05	-0.73
89MC2D		40.70	-1.49	-0.56	47.70	0.05	0.02
8GTEZJ		43.80	1.61	0.60	51.27	3.62	1.30
93TTJF		42.77	0.58	0.22	47.49	-0.16	-0.06
9MEQCQ		47.60	5.41	2.03	51.30	3.65	1.31
9NUQX2		41.00	-1.19	-0.45	45.20	-2.45	-0.88
AHD63Y		41.30	-0.89	-0.33	48.90	1.25	0.45
BTH4YF		43.00	0.81	0.30	47.00	-0.65	-0.23
BWGGL6		39.10	-3.09	-1.16	47.40	-0.25	-0.09
BYKLL7		39.79	-2.40	-0.90	45.35	-2.30	-0.82
CHQD4Y		41.88	-0.31	-0.12	45.96	-1.69	-0.60
CKH4YD	*	47.90	5.71	2.14	55.00	7.35	2.63
CKMKXC		41.62	-0.56	-0.21	46.55	-1.10	-0.39
CNK2A7		43.55	1.36	0.51	49.91	2.26	0.81
D9KTGW		40.30	-1.89	-0.71	45.70	-1.95	-0.70
DPP3K4		43.37	1.18	0.44	48.01	0.36	0.13
DTNEG4		41.10	-1.09	-0.41	48.00	0.35	0.13
DTQ4KZ		42.40	0.21	0.08	48.20	0.55	0.20
DWA96G		40.90	-1.29	-0.48	45.83	-1.82	-0.65
E7QFGB	*	41.10	-1.09	-0.41	50.77	3.12	1.12
EAPQDB		38.61	-3.58	-1.34	46.59	-1.06	-0.38
EAQNN7		45.00	2.81	1.05	47.50	-0.15	-0.05
EYE2VA		43.68	1.49	0.56	49.30	1.65	0.59
G3PQD9		40.09	-2.10	-0.79	46.79	-0.86	-0.31
G8G8GM		40.30	-1.89	-0.71	45.20	-2.45	-0.88
GAK3Y4		43.80	1.61	0.60	49.60	1.95	0.70
H93HGE		38.31	-3.88	-1.45	44.04	-3.61	-1.29
HNGGWD		42.12	-0.07	-0.03	48.97	1.32	0.47
HUPZYC		42.30	0.11	0.04	46.80	-0.85	-0.30
J3EYC3		41.60	-0.59	-0.22	48.50	0.85	0.30
JDGJCA	*	48.40	6.21	2.33	54.78	7.13	2.55
JFGQHF		40.09	-2.10	-0.79	46.77	-0.88	-0.31
JMF4NB		42.30	0.11	0.04	47.50	-0.15	-0.05
JPMLM7		40.80	-1.39	-0.52	47.30	-0.35	-0.13
JVU29N		38.08	-4.11	-1.54	41.45	-6.20	-2.22
KUD6FN		41.80	-0.39	-0.15	46.80	-0.85	-0.30
LD8BAZ	M	39.10	-3.09	-1.16	No Data Reported		



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1122

1st Qtr 2026

Yield Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
LQWA3N		43.30	1.11	0.42	46.90	-0.75	-0.27
M4CR8C		40.58	-1.61	-0.60	46.92	-0.73	-0.26
MAFKEL		40.80	-1.39	-0.52	48.00	0.35	0.13
MC6ZUN		41.10	-1.09	-0.41	46.20	-1.45	-0.52
MH9VPG		42.80	0.61	0.23	46.34	-1.31	-0.47
MK3JJX	*	49.60	7.41	2.78	53.50	5.85	2.09
MWFTYB		38.80	-3.39	-1.27	43.50	-4.15	-1.49
NBTMM7		43.95	1.76	0.66	49.44	1.79	0.64
NJ8AZF		37.70	-4.49	-1.68	41.20	-6.45	-2.31
NTP32B		41.61	-0.58	-0.22	46.00	-1.65	-0.59
P66D3Z		39.27	-2.92	-1.10	47.11	-0.54	-0.19
P7ECA3		42.20	0.01	0.00	47.90	0.25	0.09
QEPN7Z		43.30	1.11	0.42	48.70	1.05	0.38
QWYYJH		41.96	-0.23	-0.09	47.29	-0.36	-0.13
RTXD86		41.50	-0.69	-0.26	45.90	-1.75	-0.63
RYNPHU	*	47.20	5.01	1.88	54.70	7.05	2.52
T698BV		47.50	5.31	1.99	51.90	4.25	1.52
U3GHFG		43.40	1.21	0.45	46.50	-1.15	-0.41
UDX2ZD		39.40	-2.79	-1.05	44.40	-3.25	-1.16
UEUHCA		42.31	0.12	0.04	46.44	-1.21	-0.43
UTQW9X		40.78	-1.41	-0.53	47.09	-0.56	-0.20
UVY742		36.21	-5.98	-2.24	43.02	-4.63	-1.66
V84RZY		43.77	1.58	0.59	49.43	1.78	0.64
VAY2L2		40.40	-1.79	-0.67	44.20	-3.45	-1.23
VFK3H7		44.40	2.21	0.83	47.20	-0.45	-0.16
VKCAYU		40.61	-1.58	-0.59	48.01	0.36	0.13
VWDNAR		43.90	1.71	0.64	50.10	2.45	0.88
WT9FHM		44.00	1.81	0.68	50.10	2.45	0.88
X7MAY6		39.50	-2.69	-1.01	45.90	-1.75	-0.63
X8JGRH		45.70	3.51	1.31	48.60	0.95	0.34
XA82A8		41.90	-0.29	-0.11	47.70	0.05	0.02
YCRDKW		43.70	1.51	0.57	48.50	0.85	0.30
YQ3ZMZ	X	47.10	4.91	1.84	46.99	-0.66	-0.24
YYMZFJ		41.50	-0.69	-0.26	46.40	-1.25	-0.45
ZBP32Y		41.31	-0.88	-0.33	46.57	-1.08	-0.39
ZEVEBL		43.50	1.31	0.49	50.90	3.25	1.16
ZTWWZZ		40.30	-1.89	-0.71	44.70	-2.95	-1.06

Summary Statistics

	Sample P15		Sample P16	
Grand Means	42.19	ksi	47.65	ksi
Std Dev Btwn Labs	2.67	ksi	2.79	ksi

Samples P15, P16 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 80 of 84 reporting participants



Analysis 1122

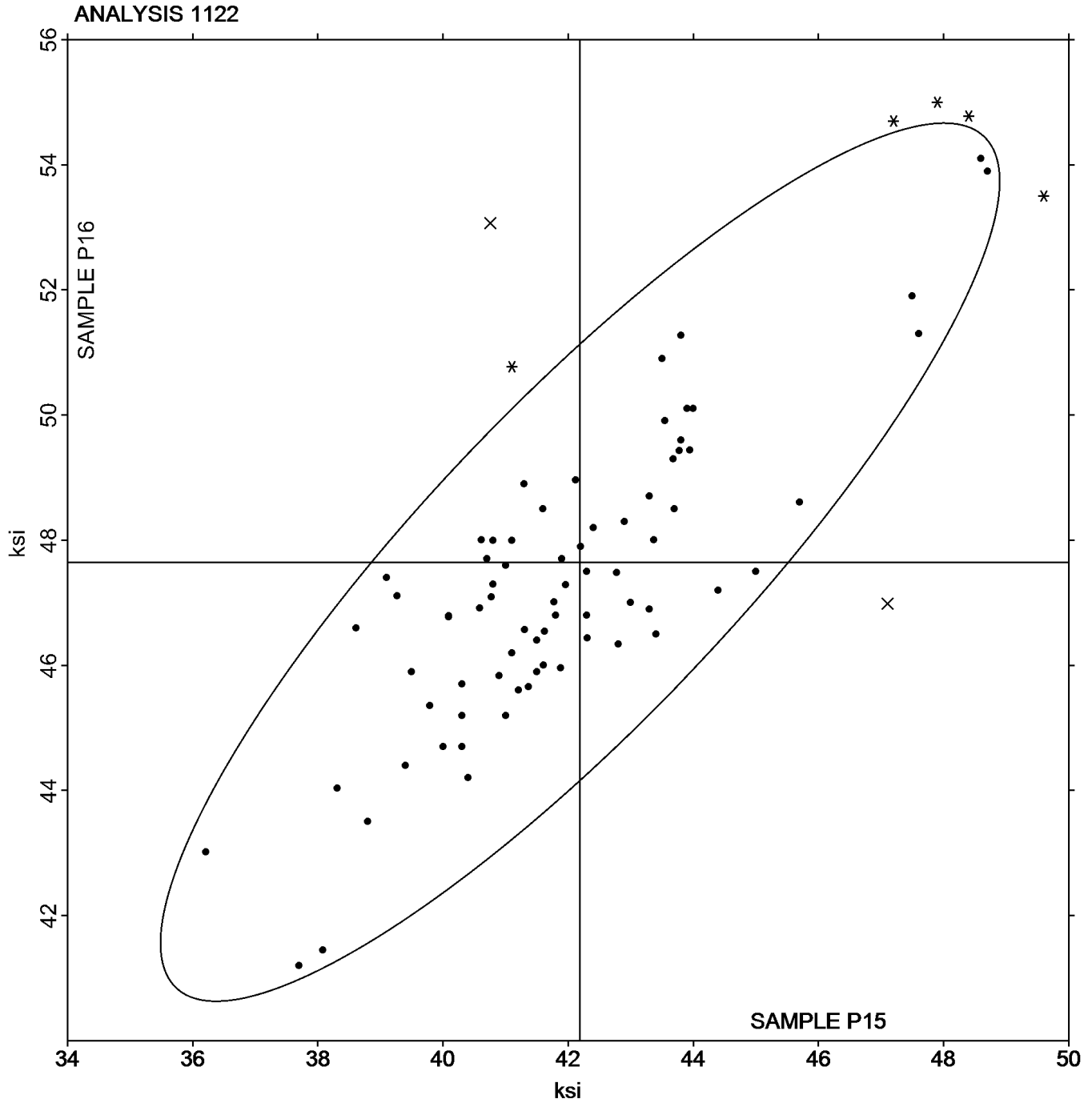
Yield Strength: Lab-Machined Round Steel
ASTM E8

SAMPLE P15

42.19 ksi

SAMPLE P16

47.65 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1123

1st Qtr 2026

Elongation: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL		34.60	-1.63	-0.68	31.60	-1.77	-0.84
2FFWEQ	X	30.40	-5.83	-2.45	34.60	1.23	0.59
2MGXTY	X	41.40	5.17	2.17	30.30	-3.07	-1.46
2UJXHT		37.10	0.87	0.37	32.94	-0.43	-0.20
39E2VJ		36.00	-0.23	-0.10	33.00	-0.37	-0.18
3JEF7G		35.90	-0.33	-0.14	32.70	-0.67	-0.32
4R6BVY		38.20	1.97	0.83	35.50	2.13	1.01
4RJNBV		36.50	0.27	0.11	34.90	1.53	0.73
6C9FXY		40.00	3.77	1.58	36.40	3.03	1.44
6PB4PT		37.10	0.87	0.37	33.40	0.03	0.01
6ZYQ7P	*	30.20	-6.03	-2.53	28.50	-4.87	-2.32
89MC2D	*	41.80	5.57	2.34	36.30	2.93	1.40
8GTEZJ		33.10	-3.13	-1.31	30.00	-3.37	-1.60
93TTJF		38.00	1.77	0.74	35.00	1.63	0.78
9MEQCQ		36.20	-0.03	-0.01	34.70	1.33	0.63
9NUQX2		34.90	-1.33	-0.56	33.30	-0.07	-0.03
AHD63Y		34.90	-1.33	-0.56	30.80	-2.57	-1.22
BTH4YF	X	29.80	-6.43	-2.70	29.80	-3.57	-1.70
BWGGL6	X	29.60	-6.63	-2.79	34.00	0.63	0.30
BYKLL7		38.80	2.57	1.08	35.80	2.43	1.16
CHQD4Y		37.00	0.77	0.32	34.00	0.63	0.30
CKH4YD		37.50	1.27	0.53	34.10	0.73	0.35
CKMKXC		32.30	-3.93	-1.65	30.70	-2.67	-1.27
CNK2A7		36.30	0.07	0.03	32.60	-0.77	-0.37
D9KTGW		37.10	0.87	0.37	34.00	0.63	0.30
DPP3K4		35.20	-1.03	-0.43	32.00	-1.37	-0.65
DTNEG4		39.60	3.37	1.42	36.00	2.63	1.25
DTQ4KZ		35.00	-1.23	-0.52	31.50	-1.87	-0.89
DWA96G		34.50	-1.73	-0.73	32.50	-0.87	-0.41
E7QFGB		34.80	-1.43	-0.60	32.98	-0.39	-0.19
EAPQDB		32.40	-3.83	-1.61	30.00	-3.37	-1.60
EAQNN7		32.50	-3.73	-1.57	30.00	-3.37	-1.60
EYE2VA		33.10	-3.13	-1.31	30.10	-3.27	-1.56
G3PQD9	X	38.20	1.97	0.83	30.10	-3.27	-1.56
G8G8GM	X	37.10	0.87	0.37	37.10	3.73	1.78
GAK3Y4		34.00	-2.23	-0.94	31.00	-2.37	-1.13
H93HGE		37.00	0.77	0.32	34.00	0.63	0.30
HNGGWD		39.70	3.47	1.46	37.50	4.13	1.97
HUPZYC		36.00	-0.23	-0.10	33.00	-0.37	-0.18
J3EYC3		34.00	-2.23	-0.94	31.00	-2.37	-1.13
JDGJCA		37.80	1.57	0.66	34.27	0.90	0.43
JFGQHF		36.70	0.47	0.20	34.92	1.55	0.74
JMF4NB		40.30	4.07	1.71	37.10	3.73	1.78
JPMLM7		33.50	-2.73	-1.15	30.90	-2.47	-1.18
JVU29N		40.20	3.97	1.67	35.80	2.43	1.16
KUD6FN		38.20	1.97	0.83	35.60	2.23	1.06
LD8BAZ	M	39.80	3.57	1.50	No Data Reported		



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1123

1st Qtr 2026

Elongation: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
LQWA3N		36.70	0.47	0.20	34.50	1.13	0.54
M4CR8C		35.65	-0.58	-0.24	32.62	-0.75	-0.36
MAFKEL		35.60	-0.63	-0.26	32.90	-0.47	-0.22
MC6ZUN		37.60	1.37	0.58	34.40	1.03	0.49
MH9VPG		36.95	0.72	0.30	33.30	-0.07	-0.03
MK3JJX		35.00	-1.23	-0.52	33.00	-0.37	-0.18
MWFTYB		35.40	-0.83	-0.35	32.80	-0.57	-0.27
NBTMM7		39.00	2.77	1.16	36.40	3.03	1.44
NJ8AZF		32.70	-3.53	-1.48	31.40	-1.97	-0.94
NTP32B		37.00	0.77	0.32	34.20	0.83	0.40
P66D3Z		39.60	3.37	1.42	34.60	1.23	0.59
P7ECA3		35.40	-0.83	-0.35	34.00	0.63	0.30
QEPN7Z		34.00	-2.23	-0.94	31.30	-2.07	-0.99
QWYYJH		39.00	2.77	1.16	35.00	1.63	0.78
RTXD86	*	39.90	3.67	1.54	38.50	5.13	2.44
RYNPHU		35.40	-0.83	-0.35	31.60	-1.77	-0.84
T698BV		36.00	-0.23	-0.10	33.30	-0.07	-0.03
U3GHFG		37.10	0.87	0.37	34.70	1.33	0.63
UDX2ZD		35.50	-0.73	-0.31	32.00	-1.37	-0.65
UEUHCA	X	32.40	-3.83	-1.61	32.85	-0.52	-0.25
UTQW9X		34.40	-1.83	-0.77	31.20	-2.17	-1.03
UVY742	X	45.00	8.77	3.68	35.50	2.13	1.01
V84RZY		39.00	2.77	1.16	36.80	3.43	1.63
VAY2L2		36.40	0.17	0.07	33.60	0.23	0.11
VFK3H7		36.70	0.47	0.20	34.00	0.63	0.30
VKCAYU		33.80	-2.43	-1.02	32.20	-1.17	-0.56
VWDNAR		38.00	1.77	0.74	34.00	0.63	0.30
WT9FHM		34.00	-2.23	-0.94	31.00	-2.37	-1.13
X7MAY6	X	40.00	3.77	1.58	33.60	0.23	0.11
X8JGRH		32.60	-3.63	-1.53	30.70	-2.67	-1.27
XA82A8		35.00	-1.23	-0.52	34.00	0.63	0.30
YCRDKW		32.00	-4.23	-1.78	31.00	-2.37	-1.13
YQ3ZMZ		35.61	-0.62	-0.26	32.41	-0.96	-0.46
YYMZFJ		36.90	0.67	0.28	33.50	0.13	0.06
ZBP32Y		40.10	3.87	1.63	36.60	3.23	1.54
ZEVEBL		35.00	-1.23	-0.52	31.00	-2.37	-1.13
ZTWWZZ		40.00	3.77	1.58	36.40	3.03	1.44

Summary Statistics

	Sample P15		Sample P16	
Grand Means	36.23	Percent	33.37	Percent
Std Dev Btwn Labs	2.38	Percent	2.10	Percent

Samples P15, P16 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 74 of 84 reporting participants



Analysis 1123

Elongation: Lab-Machined Round Steel

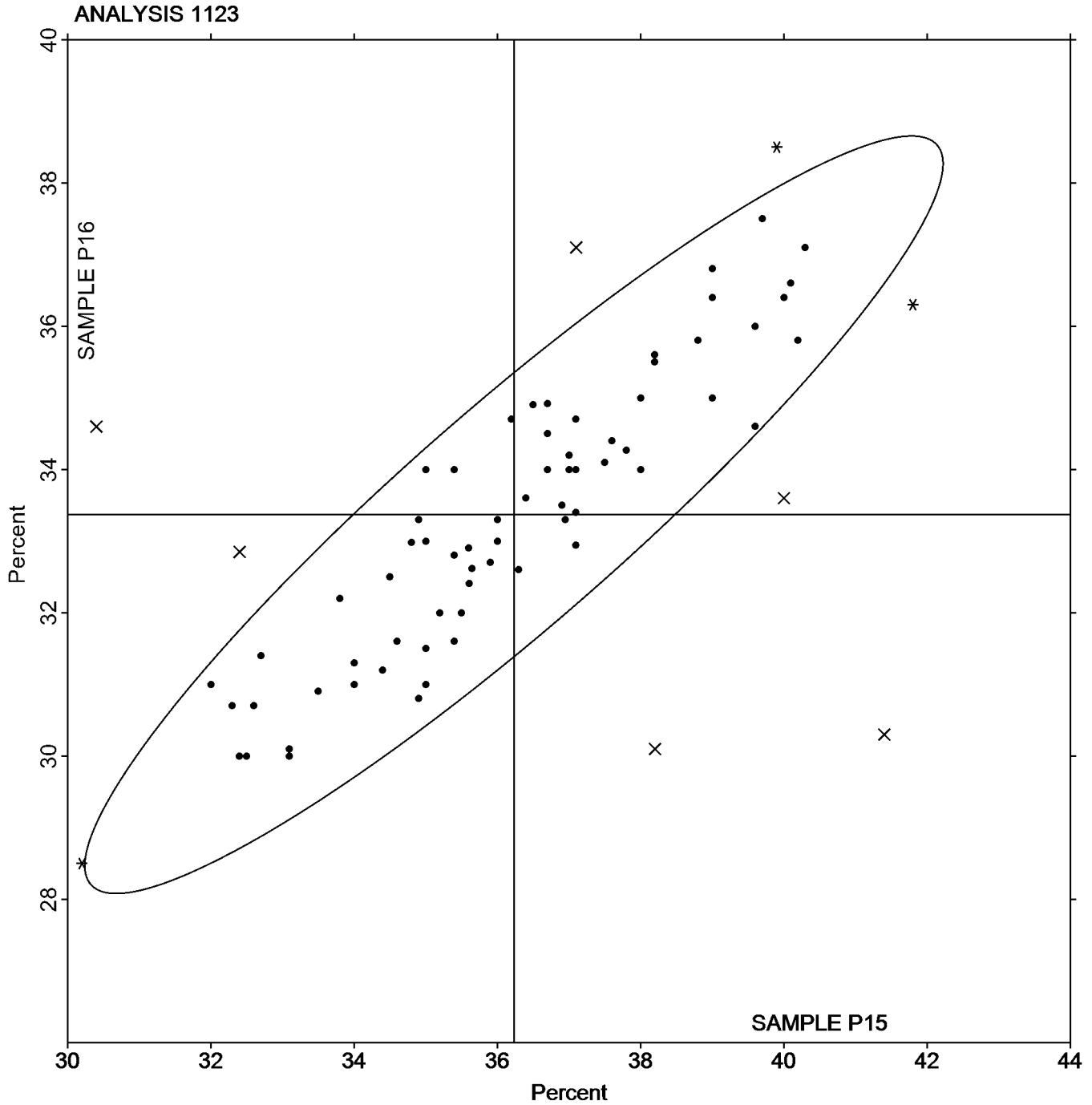
ASTM E8

SAMPLE P15

36.23 Percent

SAMPLE P16

33.37 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1124

1st Qtr 2026

Reduction of Area: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL	*	71.00	2.25	2.19	64.20	-0.98	-1.02
2FFWEQ	*	67.00	-1.75	-1.71	67.00	1.82	1.91
2MGXTY		70.80	2.05	2.00	66.70	1.52	1.60
2UJXHT	X	63.42	-5.33	-5.21	64.89	-0.29	-0.30
39E2VJ		69.00	0.25	0.24	65.00	-0.18	-0.19
3JEF7G		68.80	0.05	0.05	64.20	-0.98	-1.02
4R6BVY		67.20	-1.55	-1.52	65.40	0.22	0.23
4RJNBV		69.10	0.35	0.34	66.10	0.92	0.97
6PB4PT	X	98.50	29.75	29.04	64.80	-0.38	-0.39
6ZYQ7P		69.00	0.25	0.24	65.00	-0.18	-0.19
89MC2D		69.20	0.45	0.44	64.60	-0.58	-0.60
8GTEZJ		69.80	1.05	1.02	64.30	-0.88	-0.92
93TTJF		68.50	-0.25	-0.25	63.10	-2.08	-2.18
9MEQCQ	*	67.20	-1.55	-1.52	67.50	2.32	2.44
9NUQX2		68.20	-0.55	-0.54	63.90	-1.28	-1.34
AHD63Y		68.90	0.15	0.14	64.60	-0.58	-0.60
BTH4YF		69.00	0.25	0.24	64.00	-1.18	-1.23
BWGGL6		68.60	-0.15	-0.15	64.80	-0.38	-0.39
BYKLL7		69.80	1.05	1.02	65.10	-0.08	-0.08
CHQD4Y		69.00	0.25	0.24	65.00	-0.18	-0.19
CKH4YD		69.00	0.25	0.24	66.00	0.82	0.86
CKMKXC	X	67.50	-1.25	-1.22	61.20	-3.98	-4.17
CNK2A7		66.50	-2.25	-2.20	64.60	-0.58	-0.60
D9KTGW		68.20	-0.55	-0.54	66.20	1.02	1.07
DPP3K4		69.00	0.25	0.24	65.00	-0.18	-0.19
DTNEG4		68.20	-0.55	-0.54	65.30	0.12	0.13
DTQ4KZ		69.20	0.45	0.44	65.80	0.62	0.65
DWA96G		67.00	-1.75	-1.71	65.00	-0.18	-0.19
E7QFGB		68.56	-0.19	-0.19	64.24	-0.94	-0.98
EAPQDB		69.20	0.45	0.44	64.90	-0.28	-0.29
EYE2VA	*	65.70	-3.05	-2.98	64.90	-0.28	-0.29
G3PQD9		67.10	-1.65	-1.61	64.80	-0.38	-0.39
GAK3Y4		70.00	1.25	1.22	65.00	-0.18	-0.19
H93HGE		69.00	0.25	0.24	65.00	-0.18	-0.19
HNGGWD		69.00	0.25	0.24	66.50	1.32	1.39
HUPZYC		70.00	1.25	1.22	65.00	-0.18	-0.19
J3EYC3		67.40	-1.35	-1.32	66.00	0.82	0.86
JDGJCA		69.53	0.78	0.76	64.12	-1.06	-1.11
JFGQHF		68.39	-0.37	-0.36	65.85	0.68	0.71
JMF4NB		67.90	-0.85	-0.83	64.80	-0.38	-0.39
JPMLM7		68.40	-0.35	-0.34	63.10	-2.08	-2.18
JVU29N		70.61	1.86	1.81	67.09	1.91	2.01
LD8BAZ	M	69.80	1.05	1.02	No Data Reported		
LQWA3N		69.10	0.35	0.34	65.90	0.72	0.76
M4CR8C		68.99	0.23	0.23	65.89	0.72	0.75
MAFKEL		68.50	-0.25	-0.25	66.10	0.92	0.97
MC6ZUN		69.90	1.15	1.12	65.50	0.32	0.34



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1124

1st Qtr 2026

Reduction of Area: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P15			Sample P16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
MH9VPG		68.74	-0.01	-0.01	64.57	-0.61	-0.64
MK3JJX		68.50	-0.25	-0.25	64.70	-0.48	-0.50
MWFTYB		68.50	-0.25	-0.25	65.90	0.72	0.76
NBTMM7		69.40	0.65	0.63	66.30	1.12	1.18
NJ8AZF		69.10	0.35	0.34	66.40	1.22	1.28
NTP32B		69.80	1.05	1.02	66.00	0.82	0.86
P66D3Z		68.90	0.15	0.14	64.30	-0.88	-0.92
P7ECA3		67.80	-0.95	-0.93	63.90	-1.28	-1.34
QEPN7Z	X	66.50	-2.25	-2.20	61.20	-3.98	-4.17
QWYYJH		70.00	1.25	1.22	66.00	0.82	0.86
RTXD86		67.60	-1.15	-1.13	65.40	0.22	0.23
RYNPHU		67.20	-1.55	-1.52	63.20	-1.98	-2.07
T698BV		69.20	0.45	0.44	64.40	-0.78	-0.81
U3GHFG		69.20	0.45	0.44	65.60	0.42	0.44
UDX2ZD		69.00	0.25	0.24	65.00	-0.18	-0.19
UEUHCA		69.43	0.68	0.66	65.84	0.66	0.70
UTQW9X		68.90	0.15	0.14	64.20	-0.98	-1.02
UVY742	X	65.30	-3.45	-3.37	63.70	-1.48	-1.55
V84RZY		68.80	0.05	0.05	66.50	1.32	1.39
VAY2L2		69.10	0.35	0.34	65.20	0.02	0.02
VFK3H7		69.70	0.95	0.92	66.50	1.32	1.39
VKCAYU		70.00	1.25	1.22	65.00	-0.18	-0.19
VWDNAR		69.80	1.05	1.02	65.60	0.42	0.44
WT9FHM		67.00	-1.75	-1.71	63.20	-1.98	-2.07
X8JGRH		68.10	-0.65	-0.64	65.80	0.62	0.65
XA82A8		70.00	1.25	1.22	65.00	-0.18	-0.19
YCRDKW		68.00	-0.75	-0.74	64.00	-1.18	-1.23
YQ3ZMZ		67.30	-1.45	-1.42	65.20	0.02	0.02
YYMZFJ		68.70	-0.05	-0.05	64.70	-0.48	-0.50
ZBP32Y		69.60	0.85	0.83	65.70	0.52	0.55
ZEVEBL		68.40	-0.35	-0.34	65.50	0.32	0.34

Summary Statistics

	Sample P15		Sample P16	
Grand Means	68.75	Percent	65.18	Percent
Stnd Dev Btwn Labs	1.02	Percent	0.95	Percent

Samples P15, P16 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 72 of 78 reporting participants



Analysis 1124

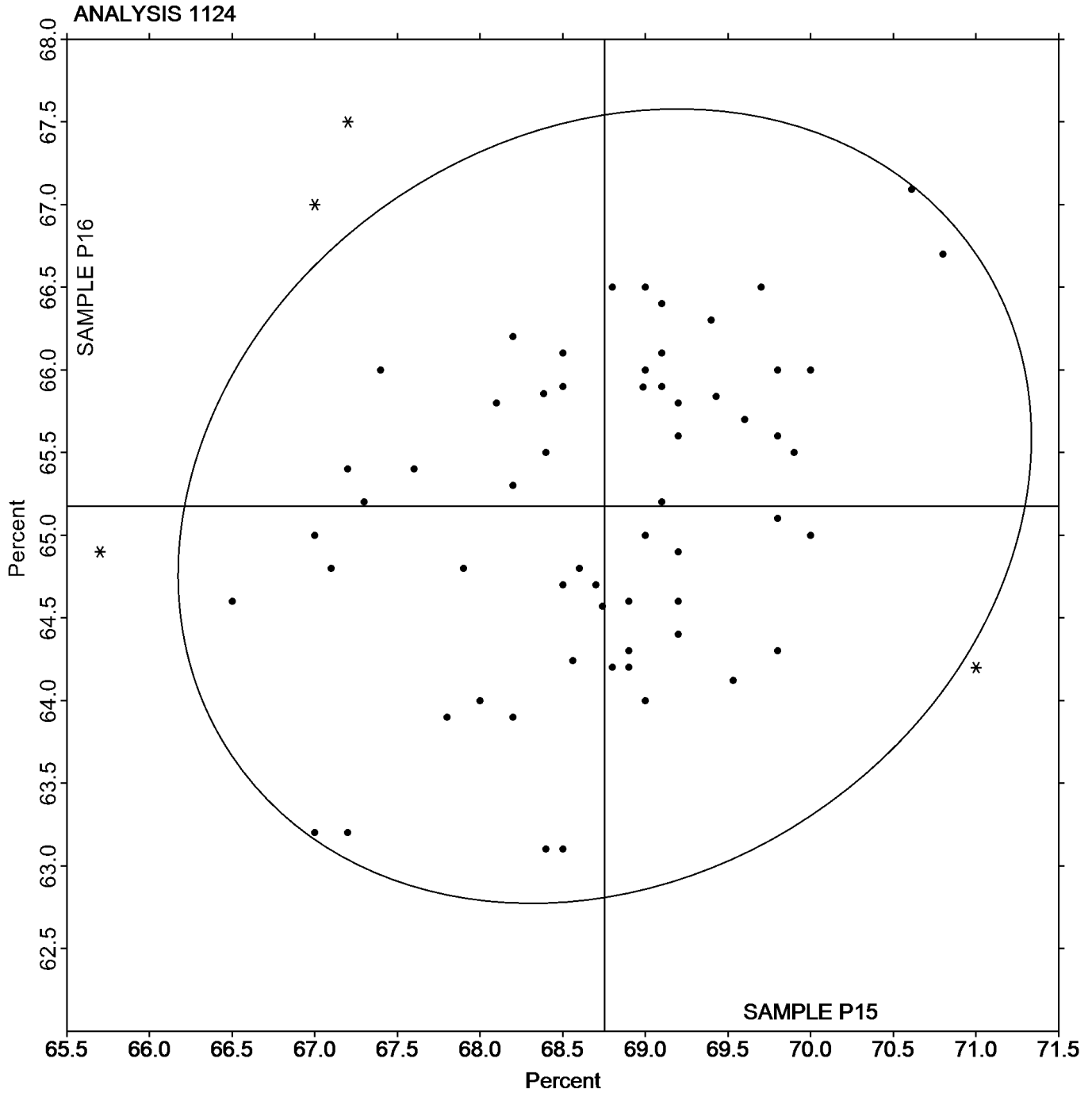
Reduction of Area: Lab-Machined Round Steel
ASTM E8

SAMPLE P15

SAMPLE P16

68.75 Percent

65.18 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1302

1st Qtr 2026

Rockwell Hardness: B Scale
ASTM E18

WebCode	Data Flag	Sample N15			Sample N16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL		91.12	2.29	1.75	98.60	0.69	1.20
2FFWEQ		88.16	-0.67	-0.51	98.10	0.19	0.33
2LP44V		88.92	0.09	0.07	97.54	-0.37	-0.65
2XHC2C	X	90.82	1.99	1.52	96.62	-1.29	-2.25
3JJX6F		88.40	-0.43	-0.33	97.40	-0.51	-0.89
3PMQB6		91.04	2.21	1.69	98.26	0.35	0.60
437VV7		88.48	-0.35	-0.27	97.98	0.07	0.12
6PB4PT		88.42	-0.41	-0.32	98.12	0.21	0.36
7GZ24R		88.10	-0.73	-0.56	97.76	-0.15	-0.26
8QLFTF		89.90	1.07	0.81	98.84	0.93	1.61
AMZBAB		88.14	-0.69	-0.53	97.36	-0.55	-0.96
AR7447		88.06	-0.77	-0.59	97.72	-0.19	-0.33
AYLYU9		88.74	-0.09	-0.07	97.82	-0.09	-0.16
BJRHTH		87.74	-1.10	-0.84	97.81	-0.11	-0.18
BTJZ9B		87.00	-1.83	-1.40	97.00	-0.91	-1.59
BWGGL6		88.46	-0.37	-0.29	98.20	0.29	0.50
C67PGF		89.76	0.93	0.71	97.12	-0.79	-1.37
C6HMDK		88.37	-0.46	-0.35	98.22	0.30	0.53
D8TNB6		88.14	-0.69	-0.53	98.04	0.13	0.22
DTNEG4		90.60	1.77	1.35	97.76	-0.15	-0.26
E7QFGB		89.42	0.59	0.45	98.58	0.67	1.16
EAPQDB		90.76	1.93	1.47	97.80	-0.11	-0.20
EBL8P9		87.84	-0.99	-0.76	97.16	-0.75	-1.31
EYE2VA		88.88	0.05	0.04	98.22	0.31	0.53
EZ3TBK		87.92	-0.91	-0.70	96.84	-1.07	-1.86
FP49WY		89.00	0.17	0.13	98.44	0.53	0.92
FPZLFK		88.46	-0.37	-0.29	97.86	-0.05	-0.09
FPZN8A		89.67	0.83	0.64	98.30	0.39	0.67
G2CGZ3		88.58	-0.25	-0.19	97.72	-0.19	-0.33
GBFKZ7		88.16	-0.67	-0.51	98.16	0.25	0.43
HM2K6D	*	90.40	1.57	1.20	96.94	-0.97	-1.69
HRFVJ3		88.40	-0.43	-0.33	98.04	0.13	0.22
JMF4NB	*	92.14	3.31	2.53	98.36	0.45	0.78
JZPJVF		88.60	-0.23	-0.18	98.30	0.39	0.67
K46KHY		87.58	-1.25	-0.96	97.76	-0.15	-0.26
K6XMYM		86.65	-2.18	-1.67	97.55	-0.36	-0.63
KAPUGV		90.60	1.77	1.35	98.00	0.09	0.15
KUJFBZ		89.16	0.33	0.25	99.18	1.27	2.20
KZ2VTB		91.61	2.78	2.12	98.44	0.53	0.92
LEEQR		89.26	0.43	0.33	99.12	1.21	2.10
LGQ6B8		88.54	-0.29	-0.22	97.78	-0.13	-0.23
MD2F4Y		88.06	-0.77	-0.59	97.74	-0.17	-0.30
MFWPP3		89.12	0.29	0.22	99.00	1.09	1.89
MH9VPG		88.30	-0.53	-0.41	97.94	0.03	0.05
NHBTNJ		86.73	-2.10	-1.61	96.59	-1.32	-2.30
NWUJKZ		87.66	-1.17	-0.90	98.16	0.25	0.43
PL6ADH		87.78	-1.05	-0.80	97.52	-0.39	-0.68



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1302

1st Qtr 2026

Rockwell Hardness: B Scale
ASTM E18

WebCode	Data Flag	Sample N15			Sample N16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PLC8WU		86.66	-2.17	-1.66	97.90	-0.01	-0.02
PVDPH6		88.14	-0.69	-0.53	97.52	-0.39	-0.68
RYNPHU		88.80	-0.03	-0.03	97.74	-0.17	-0.30
T2QW8Y		88.12	-0.71	-0.55	97.28	-0.63	-1.10
TN2WHH	*	86.42	-2.41	-1.84	96.34	-1.57	-2.73
TXRKCZ		90.98	2.15	1.64	97.96	0.05	0.08
U463X7		88.00	-0.83	-0.64	97.74	-0.17	-0.30
V96BFM		88.64	-0.19	-0.15	98.30	0.39	0.67
Y98K9U		87.62	-1.21	-0.93	97.84	-0.07	-0.13
YBDUQR		90.75	1.91	1.46	98.26	0.35	0.61
YCRDKW		88.02	-0.81	-0.62	97.46	-0.45	-0.79
YQ3ZMZ		88.98	0.15	0.11	98.92	1.01	1.75
YQ8KB3		88.36	-0.47	-0.36	97.70	-0.21	-0.37
ZKFM8X		91.72	2.89	2.20	98.60	0.69	1.20
ZLB7BK		88.88	0.05	0.04	97.56	-0.35	-0.61
ZYY9VX		90.78	1.95	1.49	98.29	0.38	0.66

Summary Statistics

	Sample N15		Sample N16	
Grand Means	88.83	HRB	97.91	HRB
Stnd Dev Brwn Labs	1.31	HRB	0.58	HRB

Samples N15, N16 : Brass, Steel

Statistics based on 62 of 63 reporting participants



Analysis 1302

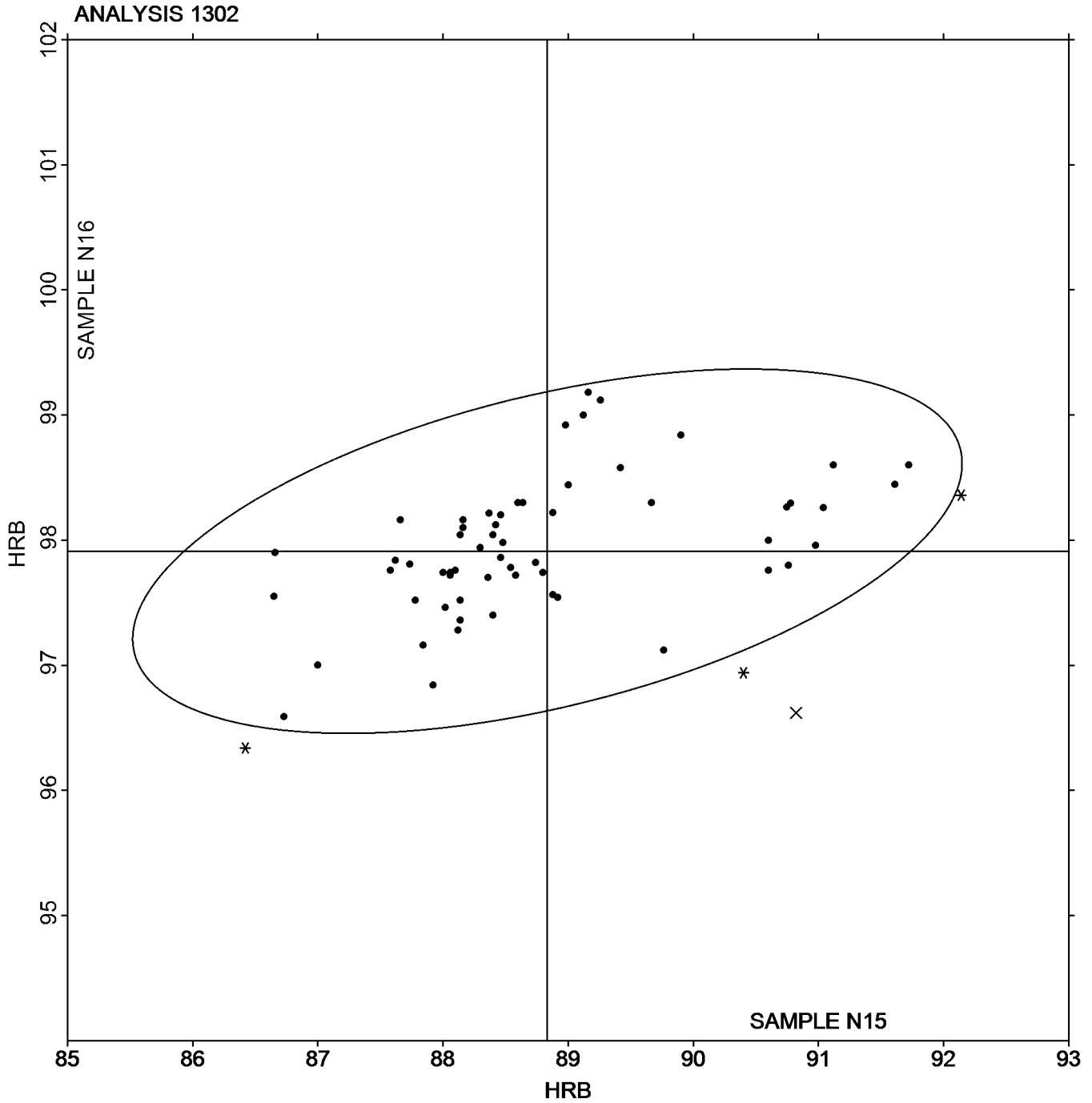
Rockwell Hardness: B Scale
ASTM E18

SAMPLE N15

SAMPLE N16

88.83 HRB

97.91 HRB





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1321

1st Qtr 2026

Microhardness: Knoop Indenters (500 gf)
ASTM E384

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
26LAXV		464.88	-4.74	-0.43	529.84	-0.89	-0.06
344NDK		463.60	-6.02	-0.54	515.60	-15.13	-1.06
39E2VJ		486.78	17.16	1.55	529.76	-0.97	-0.07
3B3B86	X	516.00	46.38	4.18	555.00	24.27	1.70
3KVICYG		463.40	-6.22	-0.56	532.00	1.27	0.09
3VVWZQD		471.40	1.78	0.16	527.60	-3.13	-0.22
3X2THQ		459.60	-10.02	-0.90	533.20	2.47	0.17
4CDDRJ		461.00	-8.62	-0.78	511.00	-19.73	-1.38
4GA8EC	*	471.34	1.72	0.15	562.78	32.05	2.24
4GLZ6K		477.40	7.78	0.70	527.00	-3.73	-0.26
4RJNBV		475.00	5.38	0.48	540.00	9.27	0.65
6DJHJX		461.18	-8.44	-0.76	521.28	-9.45	-0.66
8GFKNP		465.80	-3.82	-0.34	528.86	-1.87	-0.13
8KRTM9		446.40	-23.22	-2.09	524.80	-5.93	-0.42
8PPZGJ		465.00	-4.62	-0.42	516.00	-14.73	-1.03
93TTJF		459.00	-10.62	-0.96	515.80	-14.93	-1.05
9MEQCQ		452.00	-17.62	-1.59	518.60	-12.13	-0.85
9NUQWF		460.32	-9.30	-0.84	523.54	-7.19	-0.50
9NUQX2		470.40	0.78	0.07	513.80	-16.93	-1.19
9XVDND		454.00	-15.62	-1.41	499.20	-31.53	-2.21
AHD63Y		459.40	-10.22	-0.92	516.80	-13.93	-0.98
BGHVGV		474.60	4.98	0.45	523.20	-7.53	-0.53
BGZRX3		466.51	-3.12	-0.28	524.46	-6.28	-0.44
BJRHTH		455.44	-14.18	-1.28	505.83	-24.90	-1.74
BJWYQF		482.22	12.60	1.13	529.72	-1.01	-0.07
BTJZ9B		468.00	-1.62	-0.15	515.00	-15.73	-1.10
C67PGF		454.36	-15.26	-1.38	513.06	-17.67	-1.24
CAE29M		466.20	-3.42	-0.31	520.40	-10.33	-0.72
CG3TLA		487.76	18.14	1.63	547.26	16.53	1.16
CKH4YD		472.60	2.98	0.27	531.00	0.27	0.02
CNK2A7		481.40	11.78	1.06	538.00	7.27	0.51
DGVV3X		470.00	0.38	0.03	544.00	13.27	0.93
DPP3K4		488.00	18.38	1.66	543.60	12.87	0.90
E4LUJD		458.80	-10.82	-0.98	536.00	5.27	0.37
E6WJ6B		464.56	-5.06	-0.46	537.84	7.11	0.50
EAPQDB	*	454.04	-15.58	-1.40	548.42	17.69	1.24
ELK4CH	*	480.80	11.18	1.01	567.20	36.47	2.55
FCUTN9		477.80	8.18	0.74	533.40	2.67	0.19
FPZLFK		484.82	15.20	1.37	551.16	20.43	1.43
G7G8F2		470.20	0.58	0.05	546.60	15.87	1.11
GGHU8X		468.00	-1.62	-0.15	526.32	-4.41	-0.31
H72BM2		460.40	-9.22	-0.83	523.80	-6.93	-0.49
H7FWYP		469.20	-0.42	-0.04	540.60	9.87	0.69
H8BC9Z		476.40	6.78	0.61	533.80	3.07	0.21
H93HGE		481.00	11.38	1.02	559.00	28.27	1.98
H963EE		464.80	-4.82	-0.43	536.80	6.07	0.42
HQPP4C		478.40	8.78	0.79	525.40	-5.33	-0.37



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1321

1st Qtr 2026

**Microhardness: Knoop Indenters (500 gf)
ASTM E384**

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
HUPZYC		463.60	-6.02	-0.54	527.60	-3.13	-0.22
HZPLM6		452.84	-16.78	-1.51	513.12	-17.61	-1.23
J3FWMY		460.80	-8.82	-0.79	521.00	-9.73	-0.68
JDGJCA		459.98	-9.64	-0.87	515.30	-15.43	-1.08
JMF4NB		485.00	15.38	1.39	554.00	23.27	1.63
KUZLLJ		464.60	-5.02	-0.45	519.88	-10.85	-0.76
KZ2VTB		476.20	6.58	0.59	533.40	2.67	0.19
LD8BAZ		486.00	16.38	1.48	558.40	27.67	1.94
M4CR8C		469.64	0.02	0.00	524.06	-6.67	-0.47
MDKZDD		470.00	0.38	0.03	515.00	-15.73	-1.10
NU9N9T		472.20	2.58	0.23	544.20	13.47	0.94
PCJ9T3		467.20	-2.42	-0.22	530.80	0.07	0.00
PL6ADH		486.80	17.18	1.55	542.60	11.87	0.83
PXGK29		468.40	-1.22	-0.11	526.20	-4.53	-0.32
Q84XFX		461.60	-8.02	-0.72	525.20	-5.53	-0.39
QEL74U		481.60	11.98	1.08	542.20	11.47	0.80
RTG8WL		490.52	20.90	1.88	544.00	13.27	0.93
TGPRVR		482.40	12.78	1.15	545.60	14.87	1.04
UZTU9M		463.60	-6.02	-0.54	509.60	-21.13	-1.48
VAY2L2	*	501.40	31.78	2.86	555.60	24.87	1.74
WARHRV		472.60	2.98	0.27	526.00	-4.73	-0.33
Y98K9U		451.08	-18.54	-1.67	529.06	-1.67	-0.12
Z7XVJQ		471.78	2.16	0.19	528.48	-2.25	-0.16

Summary Statistics						
	Sample S15			Sample S16		
Grand Means	469.62	HK	500 gf	530.73	HK	500 gf
Stnd Dev Btwn Labs	11.10	HK	500 gf	14.28	HK	500 gf

Samples S15, S16 : Steel, Steel

Statistics based on 69 of 70 reporting participants

Comments on Assigned Data Flags for Test #1321

3B3B86 (X) - Data for sample S15 are high.



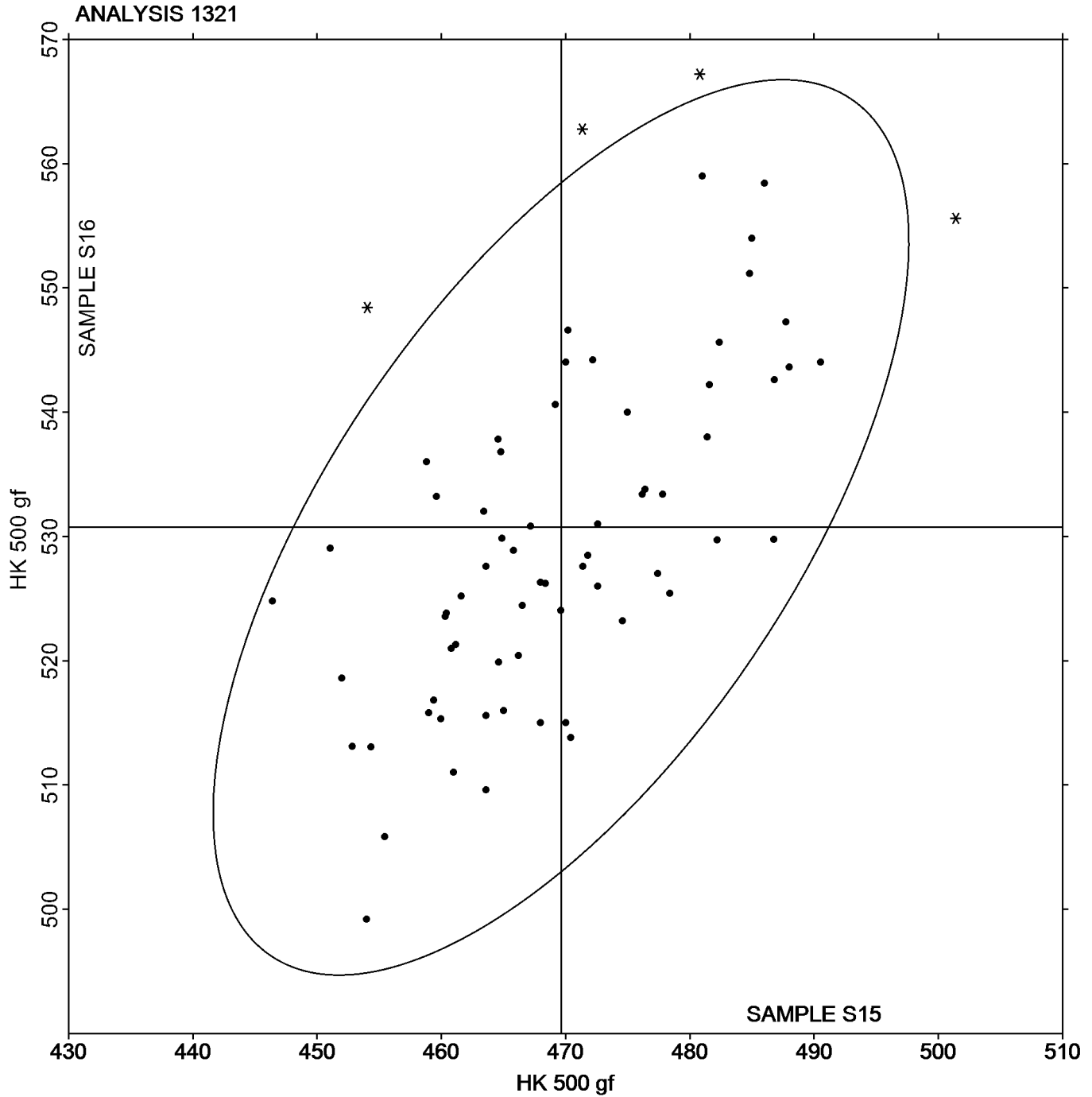
Analysis 1321

Microhardness: Knoop Indenters (500 gf)

ASTM E384

SAMPLE S15
469.62 HK 500 gf

SAMPLE S16
530.73 HK 500 gf





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1322

1st Qtr 2026

Microhardness: Knoop Indenters (200 gf)
ASTM E384

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
26LAXV		498.68	17.90	1.36	568.68	24.51	1.48
344NDK		473.00	-7.78	-0.59	526.20	-17.97	-1.08
3KVCYG		488.60	7.82	0.59	547.20	3.03	0.18
3VWZQD		494.40	13.62	1.03	564.40	20.23	1.22
3X2THQ		474.00	-6.78	-0.52	525.80	-18.37	-1.11
4CDDRJ		470.00	-10.78	-0.82	521.20	-22.97	-1.38
4GA8EC		473.60	-7.18	-0.55	564.62	20.45	1.23
4RJNBV		499.20	18.42	1.40	559.00	14.83	0.89
8GFKNP		505.20	24.42	1.86	553.14	8.97	0.54
8KRTM9		453.20	-27.58	-2.10	528.20	-15.97	-0.96
93TTJF		464.40	-16.38	-1.24	535.80	-8.37	-0.50
9MEQCQ	X	472.00	-8.78	-0.67	599.60	55.43	3.34
9NUQWF		464.46	-16.32	-1.24	529.48	-14.69	-0.88
9NUQX2		487.60	6.82	0.52	552.00	7.83	0.47
9XVDND		464.00	-16.78	-1.27	519.40	-24.77	-1.49
AHD63Y		477.40	-3.38	-0.26	524.00	-20.17	-1.21
BGHVGV		493.60	12.82	0.97	551.00	6.83	0.41
BJRHTH		461.27	-19.51	-1.48	514.54	-29.63	-1.78
BJWYQF		475.49	-5.29	-0.40	528.97	-15.20	-0.92
BTJZ9B		467.00	-13.78	-1.05	526.00	-18.17	-1.09
C67PGF		466.42	-14.36	-1.09	535.16	-9.00	-0.54
CAE29M		464.00	-16.78	-1.27	521.80	-22.37	-1.35
CG3TLA		490.64	9.86	0.75	561.70	17.53	1.06
CNK2A7		492.20	11.42	0.87	550.60	6.43	0.39
DGVV3X		482.20	1.42	0.11	522.40	-21.77	-1.31
DPP3K4		483.40	2.62	0.20	543.00	-1.17	-0.07
E6WJ6B		483.08	2.30	0.17	560.06	15.89	0.96
EAPQDB		489.78	9.00	0.68	538.56	-5.61	-0.34
ELK4CH		491.00	10.22	0.78	567.40	23.23	1.40
FPZLFK		496.92	16.14	1.23	580.50	36.33	2.19
GGHU8X		484.62	3.84	0.29	546.86	2.69	0.16
H72BM2		469.00	-11.78	-0.90	536.00	-8.17	-0.49
H8BC9Z		483.60	2.82	0.21	542.00	-2.17	-0.13
H93HGE		481.80	1.02	0.08	561.80	17.63	1.06
HQPP4C		511.40	30.62	2.33	562.00	17.83	1.07
HUPZYC		482.20	1.42	0.11	548.00	3.83	0.23
HZPLM6		476.10	-4.68	-0.36	545.32	1.15	0.07
J3FWMY		469.20	-11.58	-0.88	532.80	-11.37	-0.68
KZ2VTB		476.00	-4.78	-0.36	543.60	-0.57	-0.03
NU9N9T		478.60	-2.18	-0.17	555.80	11.63	0.70
PL6ADH		505.60	24.82	1.89	554.60	10.43	0.63
Q84XFX		469.00	-11.78	-0.90	547.80	3.63	0.22
QEL74U		494.80	14.02	1.07	563.80	19.63	1.18
RTG8WL		482.76	1.98	0.15	536.20	-7.97	-0.48
UZTU9M		468.60	-12.18	-0.93	521.20	-22.97	-1.38
WARHRV		483.80	3.02	0.23	541.80	-2.37	-0.14
Y98K9U	*	474.02	-6.76	-0.51	571.22	27.05	1.63



Summary Statistics

	<u>Sample S15</u>		<u>Sample S16</u>	
Grand Means	480.78	HK 200 gf	544.17	HK 200 gf
Stnd Dev Btwn Labs	13.16	HK 200 gf	16.60	HK 200 gf

Samples S15, S16 : Steel, Steel

Statistics based on 46 of 47 reporting participants

Comments on Assigned Data Flags for Test #1322

9MEQCQ (X) - Data for sample S16 are high. Inconsistent within the determinations of sample S16.



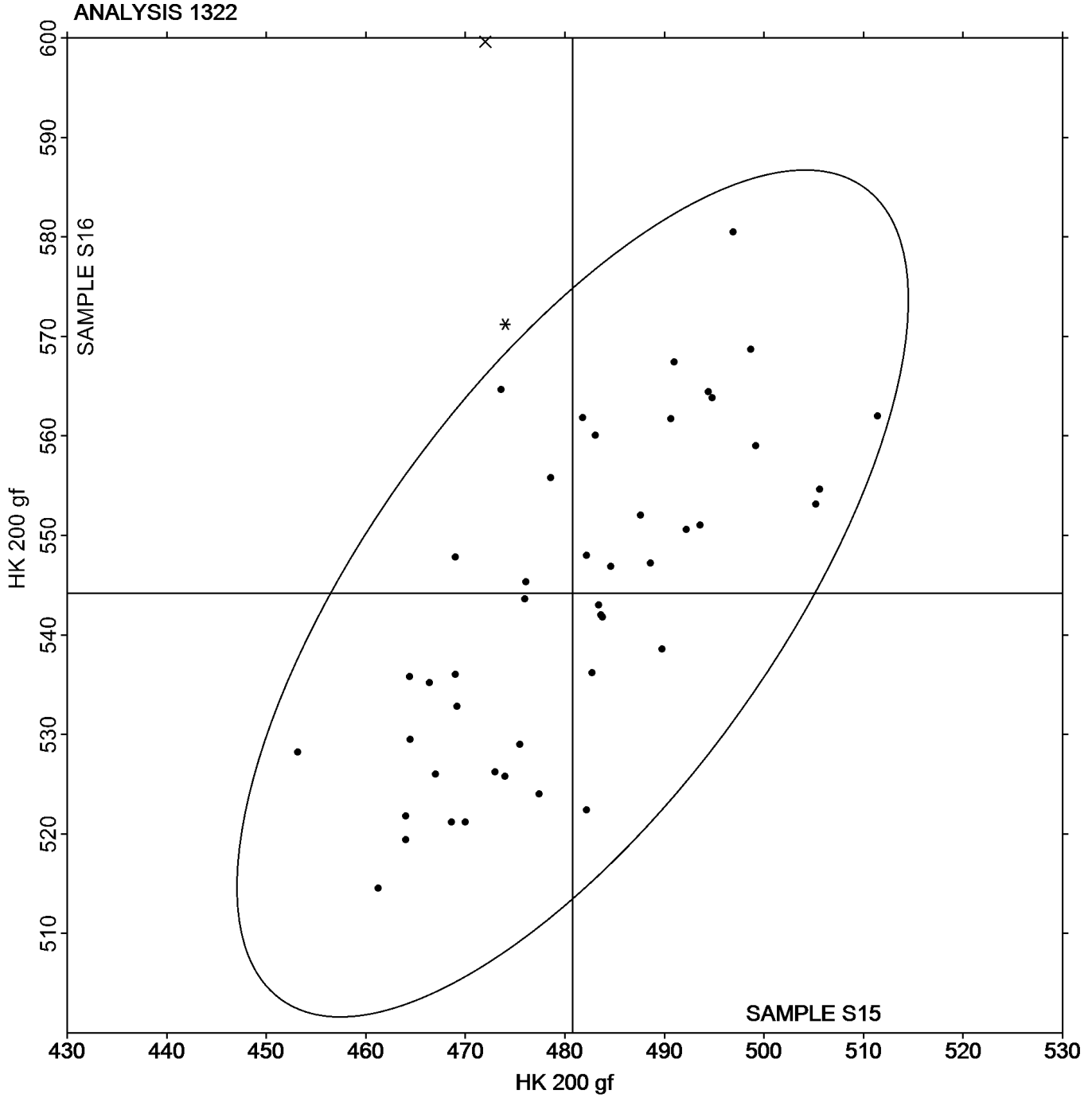
Analysis 1322

Microhardness: Knoop Indenters (200 gf)

ASTM E384

SAMPLE S15
480.78 HK 200 gf

SAMPLE S16
544.17 HK 200 gf





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1323

1st Qtr 2026

Microhardness: Vickers Indenters (500 gf)
ASTM E384

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2CZ4PJ	X	488.40	37.89	4.24	541.60	28.05	2.57
2FFWEQ		452.46	1.95	0.22	526.58	13.03	1.19
344NDK		444.00	-6.51	-0.73	513.60	0.05	0.00
3KVICYG		447.40	-3.11	-0.35	507.20	-6.35	-0.58
3VWZQD		449.60	-0.91	-0.10	511.00	-2.55	-0.23
3X2THQ		449.80	-0.71	-0.08	514.60	1.05	0.10
437VV7		445.40	-5.11	-0.57	516.40	2.85	0.26
4CDDRJ		447.80	-2.71	-0.30	510.00	-3.55	-0.33
4FRAY7		457.50	6.99	0.78	502.42	-11.13	-1.02
4RJNBV		454.80	4.29	0.48	511.20	-2.35	-0.22
4UA3KR		460.68	10.17	1.14	523.40	9.85	0.90
4ZCYH7		463.00	12.49	1.40	530.25	16.70	1.53
6PELUJ		467.80	17.29	1.93	529.00	15.45	1.41
7HUR9L		457.60	7.09	0.79	521.60	8.05	0.74
7KK4XJ		451.80	1.29	0.14	507.80	-5.75	-0.53
8GFKNP		444.60	-5.91	-0.66	508.04	-5.51	-0.51
8KRTM9		432.20	-18.31	-2.05	500.00	-13.55	-1.24
8QLFTF		454.80	4.29	0.48	510.00	-3.55	-0.33
93TTJF		446.00	-4.51	-0.50	512.40	-1.15	-0.11
9MEQCQ		441.40	-9.11	-1.02	502.80	-10.75	-0.99
9NUQWF		448.42	-2.09	-0.23	501.30	-12.25	-1.12
9NUQX2		458.40	7.89	0.88	527.00	13.45	1.23
9XVDND		451.40	0.89	0.10	507.40	-6.15	-0.56
AHD63Y		436.40	-14.11	-1.58	494.80	-18.75	-1.72
BGHVGVW		446.40	-4.11	-0.46	507.00	-6.55	-0.60
BGZR3	*	454.22	3.71	0.42	494.62	-18.93	-1.73
BJRHTH	*	463.12	12.61	1.41	505.34	-8.21	-0.75
BJWYQF	*	458.17	7.66	0.86	541.16	27.61	2.53
BTJZ9B		443.00	-7.51	-0.84	503.00	-10.55	-0.97
BV6WKH		444.54	-5.97	-0.67	513.78	0.23	0.02
C2Q4MN		450.02	-0.49	-0.05	517.84	4.29	0.39
C67PGF		447.38	-3.13	-0.35	512.78	-0.77	-0.07
CAE29M		451.20	0.69	0.08	508.80	-4.75	-0.44
CCLHKY		447.80	-2.71	-0.30	518.40	4.85	0.44
CG3TLA		451.20	0.69	0.08	515.80	2.25	0.21
CG4QW6		460.40	9.89	1.11	529.40	15.85	1.45
CKH4YD		452.60	2.09	0.23	524.00	10.45	0.96
CLPRQN		435.80	-14.71	-1.65	502.20	-11.35	-1.04
CNK2A7		462.80	12.29	1.38	511.90	-1.65	-0.15
D3W9DG		446.20	-4.31	-0.48	505.40	-8.15	-0.75
DGVV3X		445.20	-5.31	-0.59	493.20	-20.35	-1.86
DLPRP4		454.60	4.09	0.46	519.00	5.45	0.50
DLTCER		431.18	-19.33	-2.16	504.48	-9.07	-0.83
DPP3K4		467.00	16.49	1.85	529.80	16.25	1.49
DTNEG4		437.00	-13.51	-1.51	505.20	-8.35	-0.77
E6WJ6B		448.14	-2.37	-0.26	505.28	-8.27	-0.76
E7QFGB		456.68	6.17	0.69	528.60	15.05	1.38



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1323

1st Qtr 2026

Microhardness: Vickers Indenters (500 gf)
ASTM E384

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
E8LVU9		438.40	-12.11	-1.35	507.12	-6.43	-0.59
EAPQDB		451.34	0.83	0.09	515.36	1.81	0.17
EBL8P9		450.40	-0.11	-0.01	523.20	9.65	0.88
ELK4CH		452.60	2.09	0.23	518.20	4.65	0.43
EQENTK		442.00	-8.51	-0.95	503.60	-9.95	-0.91
EQJ9GN		461.20	10.69	1.20	519.80	6.25	0.57
EZ3TBK		439.40	-11.11	-1.24	505.40	-8.15	-0.75
FPZLFK		454.84	4.33	0.48	509.22	-4.33	-0.40
G7G8F2	X	447.40	-3.11	-0.35	537.40	23.85	2.18
G97LU4		441.34	-9.17	-1.03	496.76	-16.79	-1.54
GAK3Y4		450.38	-0.13	-0.01	512.48	-1.07	-0.10
GGHU8X		438.38	-12.13	-1.36	500.98	-12.57	-1.15
GWGGWE		446.40	-4.11	-0.46	513.00	-0.55	-0.05
GY3HGT		435.20	-15.31	-1.71	500.20	-13.35	-1.22
H72BM2		448.60	-1.91	-0.21	512.00	-1.55	-0.14
H7FWYP		450.80	0.29	0.03	513.60	0.05	0.00
H8BC9Z		459.60	9.09	1.02	523.00	9.45	0.87
H93HGE	X	481.00	30.49	3.41	559.40	45.85	4.20
HQPP4C		443.40	-7.11	-0.80	507.20	-6.35	-0.58
HUPZYC		442.00	-8.51	-0.95	511.80	-1.75	-0.16
J3FWMY		433.00	-17.51	-1.96	496.00	-17.55	-1.61
JDGJCA		462.36	11.85	1.33	528.38	14.83	1.36
JMF4NB		461.40	10.89	1.22	524.20	10.65	0.98
JQZVZD		455.40	4.89	0.55	517.00	3.45	0.32
KEKMCC		458.40	7.89	0.88	524.40	10.85	0.99
KUZLLJ		445.64	-4.87	-0.54	507.12	-6.43	-0.59
KZ2VTB		451.40	0.89	0.10	514.20	0.65	0.06
LD8BAZ		451.80	1.29	0.14	518.60	5.05	0.46
MC7ZR3		443.42	-7.09	-0.79	501.28	-12.27	-1.12
MH9VPG		460.28	9.77	1.09	530.12	16.57	1.52
MWFTYB		446.40	-4.11	-0.46	498.00	-15.55	-1.42
NTP32B		457.00	6.49	0.73	523.80	10.25	0.94
NU9N9T		455.80	5.29	0.59	523.20	9.65	0.88
NWNDWB		453.38	2.87	0.32	517.22	3.67	0.34
PCJ9T3		465.40	14.89	1.67	519.60	6.05	0.55
PL6ADH		463.00	12.49	1.40	528.20	14.65	1.34
PXGK29		446.40	-4.11	-0.46	511.60	-1.95	-0.18
Q84XFX		437.60	-12.91	-1.44	503.00	-10.55	-0.97
Q8K4QG		446.40	-4.11	-0.46	503.60	-9.95	-0.91
QEL74U		451.80	1.29	0.14	524.40	10.85	0.99
QV8UC6		467.58	17.07	1.91	525.26	11.71	1.07
RTG8WL		470.36	19.85	2.22	533.48	19.93	1.83
T9RYMX		436.60	-13.91	-1.56	504.00	-9.55	-0.88
TGPRVR	*	447.80	-2.71	-0.30	489.80	-23.75	-2.18
U9KDBA		449.66	-0.85	-0.09	527.94	14.39	1.32
UHFC2N	*	461.20	10.69	1.20	540.20	26.65	2.44
UVY742		457.10	6.59	0.74	528.92	15.37	1.41



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1323

1st Qtr 2026

**Microhardness: Vickers Indenters (500 gf)
ASTM E384**

WebCode	Data Flag	Sample S15			Sample S16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
UZTU9M		451.40	0.89	0.10	504.00	-9.55	-0.88
VAY2L2	*	474.00	23.49	2.63	530.60	17.05	1.56
VU3V7D		442.84	-7.67	-0.86	504.66	-8.89	-0.81
VWDNAR		448.00	-2.51	-0.28	509.60	-3.95	-0.36
W7DKK9		455.40	4.89	0.55	525.60	12.05	1.10
WARHRV		454.00	3.49	0.39	511.80	-1.75	-0.16
XMTGBL		440.60	-9.91	-1.11	509.38	-4.17	-0.38
YCRDKW		441.00	-9.51	-1.06	514.40	0.85	0.08
ZHTVAA		442.78	-7.73	-0.86	503.20	-10.35	-0.95

Summary Statistics		Sample S15		Sample S16	
Grand Means		450.51	HV 500 gf	513.55	HV 500 gf
Stnd Dev Btrwn Labs		8.94	HV 500 gf	10.92	HV 500 gf

Samples S15, S16 : Steel, Steel

Statistics based on 100 of 103 reporting participants

Comments on Assigned Data Flags for Test #1323

2CZ4PJ (X) - Data for sample S15 are high.

G7G8F2 (X) - Inconsistent in testing between samples.

H93HGE (X) - Data for both samples are high.



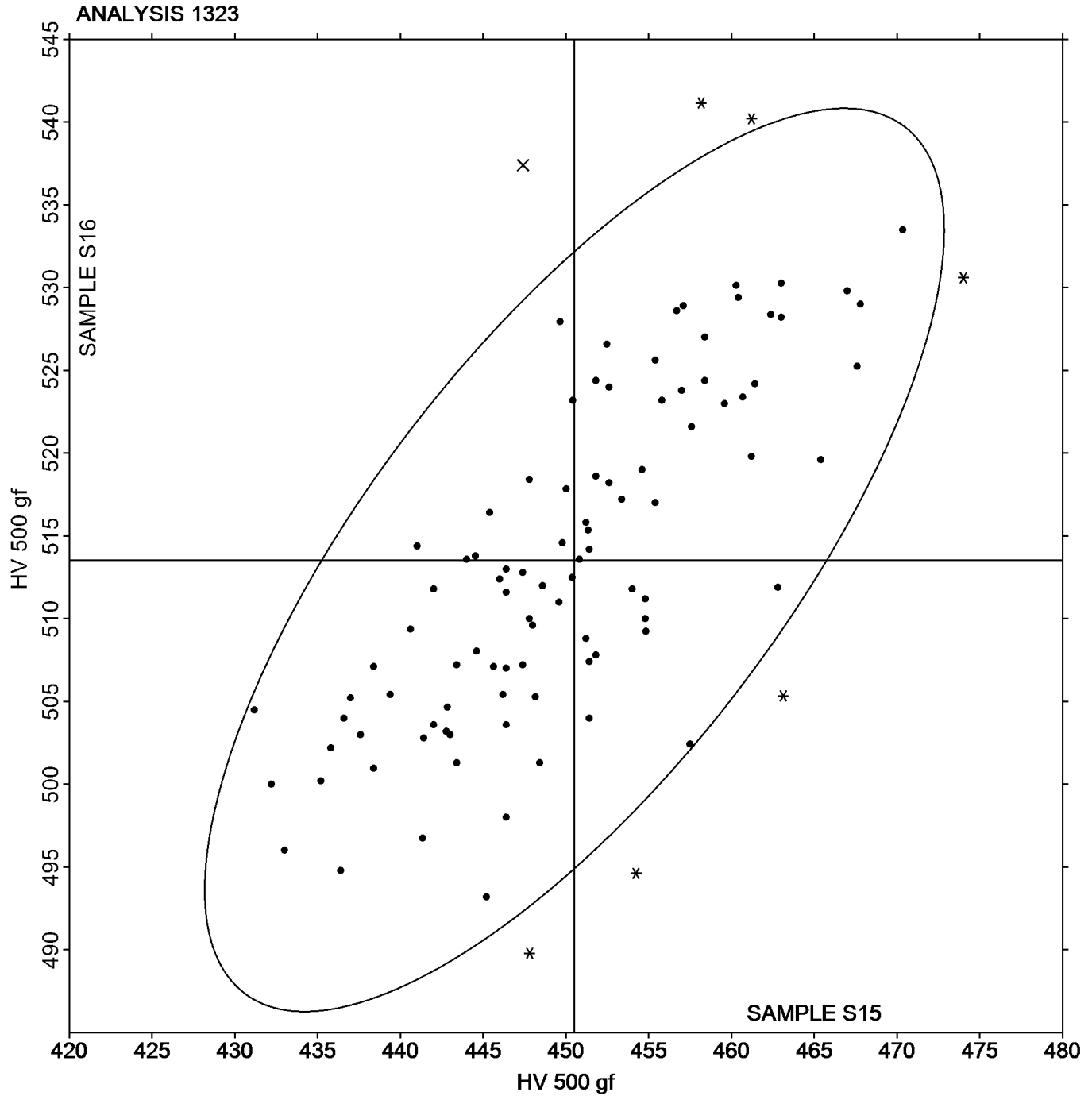
Analysis 1323

Microhardness: Vickers Indenters (500 gf)

ASTM E384

SAMPLE S15
450.51 HV 500 gf

SAMPLE S16
513.55 HV 500 gf





Fasteners and Metals Interlaboratory Testing Program
Analysis 1341
Brinell Hardness
ASTM E10

Cycle 153
1st Qtr 2026

WebCode	Data Flag	Sample D15			Sample D16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2C4NDL		342.40	-5.53	-0.91	377.20	-5.42	-0.77
2FFWEQ		347.00	-0.93	-0.15	383.40	0.78	0.11
2MGXTY	*	363.00	15.07	2.49	401.00	18.38	2.60
2UJXHT		342.60	-5.33	-0.88	370.60	-12.02	-1.70
3FF3KD	X	332.20	-15.73	-2.60	385.00	2.38	0.34
4CDDRJ		350.80	2.87	0.47	385.80	3.18	0.45
4GMQB3		344.60	-3.33	-0.55	390.60	7.98	1.13
4NPZHV		353.80	5.87	0.97	386.60	3.98	0.56
4R6BVY	*	329.20	-18.73	-3.09	364.80	-17.82	-2.52
4RJNBV		352.40	4.47	0.74	384.20	1.58	0.22
6C9FXV		349.76	1.83	0.30	382.44	-0.18	-0.03
6PB4PT		346.60	-1.33	-0.22	379.20	-3.42	-0.48
6ZYQ7P		344.80	-3.13	-0.52	377.00	-5.62	-0.79
8482NA		343.20	-4.73	-0.78	385.40	2.78	0.39
8QLFTF	*	353.60	5.67	0.94	373.80	-8.82	-1.25
93TTJF		344.00	-3.93	-0.65	373.80	-8.82	-1.25
9NUQX2		354.80	6.87	1.13	386.60	3.98	0.56
A8LA9E		351.80	3.87	0.64	382.80	0.18	0.03
BJRHTH		353.00	5.07	0.84	395.80	13.18	1.86
BMQ6W7		343.20	-4.73	-0.78	374.80	-7.82	-1.11
BWGL6		345.00	-2.93	-0.48	384.40	1.78	0.25
C67PGF		353.00	5.07	0.84	385.60	2.98	0.42
CAE29M		349.40	1.47	0.24	381.20	-1.42	-0.20
CHQD4Y		353.80	5.87	0.97	388.20	5.58	0.79
CNK2A7		352.00	4.07	0.67	388.00	5.38	0.76
D9KTGW		334.64	-13.29	-2.19	367.45	-15.16	-2.14
DPP3K4		341.20	-6.73	-1.11	369.00	-13.62	-1.93
DTNEG4		353.60	5.67	0.94	390.20	7.58	1.07
E7QFGB		346.40	-1.53	-0.25	376.00	-6.62	-0.94
EAPQDB		344.20	-3.73	-0.62	368.80	-13.82	-1.95
EAQNN7		354.80	6.87	1.13	388.00	5.38	0.76
EMWFET		341.00	-6.93	-1.14	385.40	2.78	0.39
EQENTK		343.06	-4.87	-0.80	374.68	-7.94	-1.12
FD2WDP		340.20	-7.73	-1.28	375.60	-7.02	-0.99
FNAHQJ		347.40	-0.53	-0.09	382.80	0.18	0.03
G8G8GM		346.12	-1.81	-0.30	381.00	-1.62	-0.23
H72BM2		343.00	-4.93	-0.81	377.40	-5.22	-0.74
H8BC9Z		351.20	3.27	0.54	377.00	-5.62	-0.79
J3EYC3		346.40	-1.53	-0.25	377.60	-5.02	-0.71
JMF4NB		351.20	3.27	0.54	388.80	6.18	0.87
JVU29N		350.96	3.03	0.50	391.94	9.32	1.32
KTHLEM		352.50	4.57	0.75	390.40	7.78	1.10
KUD6FN		360.80	12.87	2.12	388.00	5.38	0.76
KUZLLJ		342.12	-5.81	-0.96	384.39	1.77	0.25
KZ2VTB		351.00	3.07	0.51	381.80	-0.82	-0.12
L2DUMK		344.36	-3.57	-0.59	381.10	-1.52	-0.21
LD8BAZ		352.80	4.87	0.80	385.20	2.58	0.37



Fasteners and Metals Interlaboratory Testing Program
Analysis 1341
 Brinell Hardness
 ASTM E10

Cycle 153
1st Qtr 2026

WebCode	Data Flag	Sample D15			Sample D16		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
M4CR8C		348.40	0.47	0.08	377.20	-5.42	-0.77
MH9VPG		352.00	4.07	0.67	388.00	5.38	0.76
MHTMM9		350.60	2.67	0.44	387.80	5.18	0.73
MK3JJX		341.00	-6.93	-1.14	380.60	-2.02	-0.29
NJ8AZF		343.20	-4.73	-0.78	385.40	2.78	0.39
NTP32B		351.00	3.07	0.51	388.80	6.18	0.87
NWNDWB		345.40	-2.53	-0.42	386.80	4.18	0.59
P6EAHC	*	341.00	-6.93	-1.14	363.00	-19.62	-2.77
PCJ9T3		352.00	4.07	0.67	388.00	5.38	0.76
PLC8WU		353.60	5.67	0.94	387.80	5.18	0.73
QEL74U		351.20	3.27	0.54	388.80	6.18	0.87
QEL77F		346.00	-1.93	-0.32	375.60	-7.02	-0.99
QHKH2F		345.20	-2.73	-0.45	378.20	-4.42	-0.62
QWYYJH		358.60	10.67	1.76	388.00	5.38	0.76
TGPRVR		346.80	-1.13	-0.19	382.00	-0.62	-0.09
TMUHCC	X	110.81	-237.12	-39.12	112.71	-269.90	-38.18
UEUHCA		347.80	-0.13	-0.02	385.00	2.38	0.34
UTQW9X		341.40	-6.53	-1.08	387.40	4.78	0.68
UZTU9M		344.26	-3.67	-0.61	378.32	-4.30	-0.61
VKCAJU		355.60	7.67	1.27	388.80	6.18	0.87
WFYZAW		344.60	-3.33	-0.55	379.60	-3.02	-0.43
X7MAY6		357.82	9.89	1.63	390.96	8.34	1.18
XTYA6G		354.80	6.87	1.13	387.40	4.78	0.68
YJP6TQ		342.70	-5.23	-0.86	379.84	-2.78	-0.39
ZEVEBL		342.20	-5.73	-0.95	385.40	2.78	0.39
ZH8KBZ	*	335.20	-12.73	-2.10	382.20	-0.42	-0.06
ZKEQYM		353.60	5.67	0.94	386.40	3.78	0.54
ZTWWZZ		350.26	2.33	0.38	387.90	5.28	0.75

Summary Statistics		Sample D15		Sample D16	
Grand Means		347.93	HBW	382.62	HBW
Std Dev Btwn Labs		6.06	HBW	7.07	HBW

Samples D15, D16 : Steel, Steel

Statistics based on 73 of 75 reporting participants

Samples D15, D16 are hardness test blocks made from steel. The blocks are heat treated to hardness levels specified by CTS.

Comments on Assigned Data Flags for Test #1341

3FF3KD (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample D15.

TMUHCC (X) - Extreme data.



Analysis 1341

Brinell Hardness

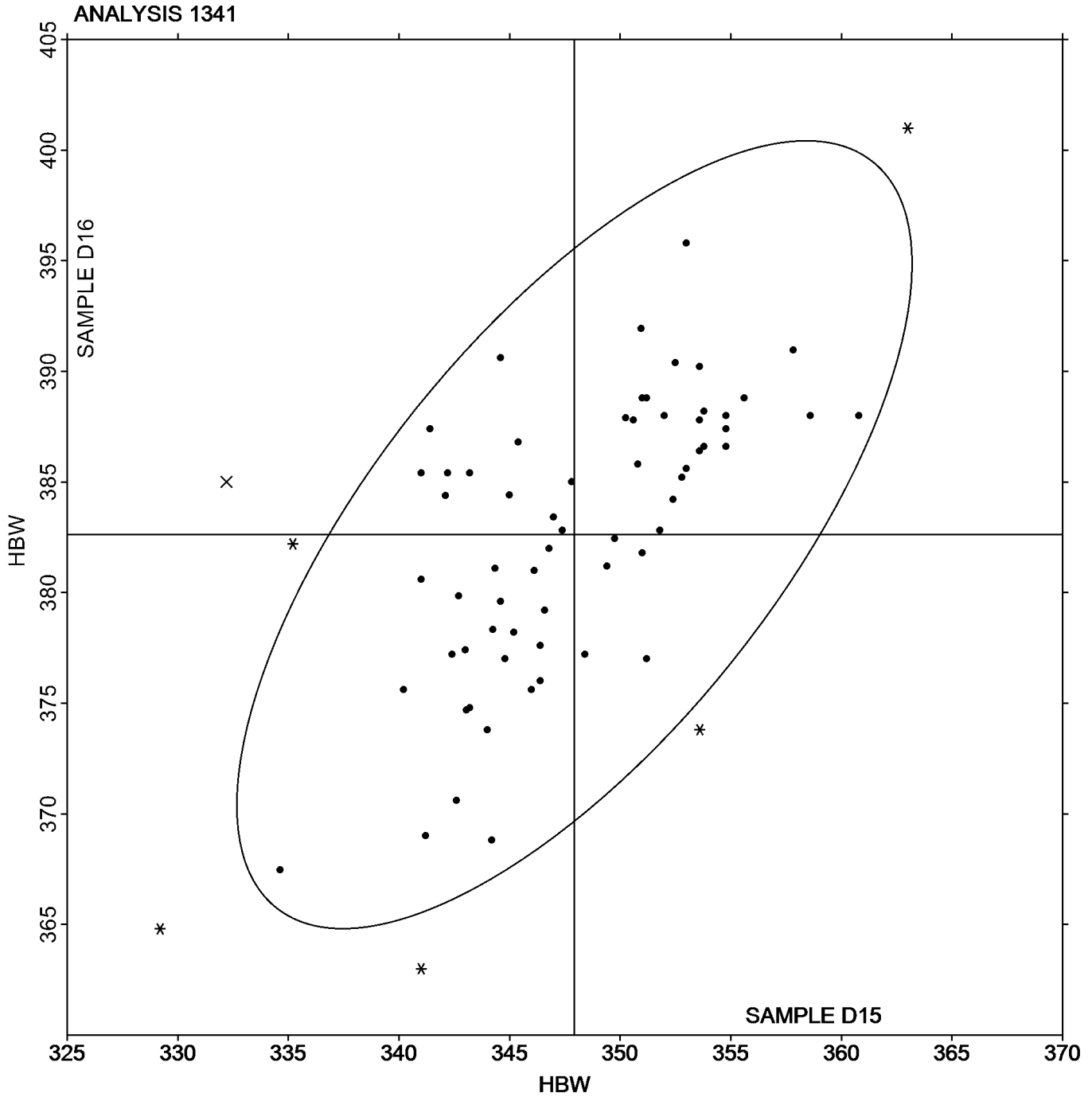
ASTM E10

SAMPLE D15

347.93 HBW

SAMPLE D16

382.62 HBW





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1600

1st Qtr 2026

Carbon & Low Alloy Steel, CARBON (C) CARBON (C)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2C4NF8	*	0.1800	0.0039	0.52	0.1533	-0.0109	-1.58	XX
2CZ4PJ	*	0.1587	-0.0174	-2.29	0.1463	-0.0179	-2.59	OE
2LP44V		0.1620	-0.0141	-1.85	0.1490	-0.0152	-2.20	OE
344NDK		0.1870	0.0109	1.44	0.1730	0.0088	1.28	OE
3FF3KD		0.1683	-0.0077	-1.02	0.1560	-0.0082	-1.19	OE
3FX63L		0.1670	-0.0091	-1.19	0.1587	-0.0055	-0.80	XX
3H4M43		0.1603	-0.0157	-2.07	0.1560	-0.0082	-1.19	CO
3KVCYG		0.1768	0.0008	0.10	0.1660	0.0018	0.26	OE
3QWWUK		0.1747	-0.0014	-0.18	0.1630	-0.0012	-0.17	IC
437VV7		0.1697	-0.0064	-0.84	0.1597	-0.0045	-0.66	CI
4DNCQX		0.1703	-0.0057	-0.75	0.1617	-0.0025	-0.37	CI
4RJNBV		0.1797	0.0036	0.48	0.1657	0.0015	0.21	OE
4UA3KR		0.1791	0.0030	0.40	0.1663	0.0021	0.31	OE
6PELUJ		0.1703	-0.0057	-0.75	0.1603	-0.0039	-0.56	OE
6UNL8A		0.1813	0.0053	0.70	0.1709	0.0067	0.97	OE
6ZYQ7P		0.1907	0.0147	1.94	0.1825	0.0183	2.65	OE
7V3LRB	X	0.2267	0.0506	6.68	0.2067	0.0425	6.16	XX
7YLGTH		0.1794	0.0033	0.44	0.1688	0.0046	0.67	OE
88QWPF		0.1768	0.0007	0.10	0.1654	0.0012	0.18	OE
89MC2D		0.1850	0.0089	1.18	0.1679	0.0037	0.54	GD
8GTE34		0.1791	0.0031	0.41	0.1663	0.0021	0.31	XX
8NJHHM		0.1718	-0.0043	-0.56	0.1594	-0.0048	-0.70	OE
8QLFTF		0.1733	-0.0027	-0.36	0.1607	-0.0035	-0.51	OE
8VEU4H		0.1610	-0.0151	-1.99	0.1493	-0.0149	-2.16	OE
8YT6GM		0.1767	0.0006	0.08	0.1647	0.0005	0.07	CO
93TTJF		0.1850	0.0089	1.18	0.1687	0.0045	0.65	OE
9MEQCQ		0.1737	-0.0024	-0.31	0.1647	0.0005	0.07	OE
9XVDND		0.1743	-0.0018	-0.23	0.1600	-0.0042	-0.61	CO
A8HR6N		0.1770	0.0009	0.12	0.1653	0.0011	0.17	OE
AJ9LEW		0.1803	0.0043	0.56	0.1637	-0.0005	-0.08	OE
B6CJNG		0.1910	0.0149	1.97	0.1700	0.0058	0.84	OE
BJRHTH		0.1787	0.0026	0.34	0.1607	-0.0035	-0.51	GD
BPEE9R		0.1749	-0.0011	-0.15	0.1639	-0.0003	-0.04	XX
BTJZ9B		0.1760	-0.0001	-0.01	0.1640	-0.0002	-0.03	OE
BUPRQQ		0.1710	-0.0051	-0.67	0.1647	0.0005	0.07	XX
C3KUT3		0.1726	-0.0034	-0.45	0.1626	-0.0016	-0.24	CI
CLPRQN		0.1717	-0.0044	-0.58	0.1583	-0.0059	-0.85	OE
CNK2A7		0.1697	-0.0064	-0.84	0.1570	-0.0072	-1.04	XX
CREYLQ		0.1760	-0.0001	-0.01	0.1580	-0.0062	-0.90	GD
D3EYKF		0.1693	-0.0067	-0.89	0.1600	-0.0042	-0.61	CI
D3RQEH		0.1657	-0.0104	-1.37	0.1560	-0.0082	-1.19	CI
D8TNB6		0.1837	0.0076	1.00	0.1653	0.0011	0.17	OE
DDB3QV		0.1803	0.0043	0.56	0.1687	0.0045	0.65	OE
DPN6A8		0.1710	-0.0051	-0.67	0.1600	-0.0042	-0.61	IR
DPP3K4		0.1730	-0.0031	-0.40	0.1570	-0.0072	-1.04	CO
DTQ4ML		0.1935	0.0174	2.30	0.1787	0.0145	2.11	OE
E7QFGB		0.1687	-0.0074	-0.97	0.1613	-0.0029	-0.41	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1600

1st Qtr 2026

Carbon & Low Alloy Steel, CARBON (C) CARBON (C)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EAPQDB		0.1803	0.0043	0.56	0.1640	-0.0002	-0.03	OE
EMWFET		0.1820	0.0059	0.78	0.1700	0.0058	0.84	OE
EYE2VA		0.1740	-0.0021	-0.27	0.1617	-0.0025	-0.37	OE
F6V7W9		0.1742	-0.0019	-0.25	0.1628	-0.0014	-0.20	CI
F6V7YT		0.1830	0.0069	0.92	0.1660	0.0018	0.26	OE
F9UGUT		0.1800	0.0039	0.52	0.1683	0.0041	0.60	OE
FBWHT6		0.1811	0.0050	0.66	0.1685	0.0043	0.63	OE
FN6X4G		0.1817	0.0056	0.74	0.1770	0.0128	1.86	OE
G97LU4		0.1877	0.0116	1.53	0.1743	0.0101	1.47	OE
GCNMZJ		0.1782	0.0021	0.28	0.1694	0.0052	0.75	XX
GWZYY7		0.1760	-0.0001	-0.01	0.1590	-0.0052	-0.75	OE
HEQ6CJ		0.1787	0.0026	0.34	0.1660	0.0018	0.26	OE
HNGGWD		0.1750	-0.0011	-0.14	0.1627	-0.0015	-0.22	CI
HQKCFF		0.1757	-0.0003	-0.04	0.1665	0.0023	0.34	OE
HUPZYC		0.1853	0.0093	1.22	0.1790	0.0148	2.15	OE
J7Q6CG		0.1769	0.0008	0.11	0.1664	0.0022	0.32	GD
JFGQHF		0.1680	-0.0081	-1.06	0.1587	-0.0055	-0.80	GD
K46KHY		0.1737	-0.0024	-0.31	0.1627	-0.0015	-0.22	CI
K6XMYM		0.1699	-0.0062	-0.81	0.1580	-0.0062	-0.91	CO
KEKMCC		0.1894	0.0133	1.76	0.1766	0.0124	1.80	OE
KLLQRA		0.1859	0.0098	1.29	0.1731	0.0089	1.30	OE
KZM9GN		0.1741	-0.0020	-0.26	0.1609	-0.0032	-0.47	CI
LD8BAZ	*	0.1733	-0.0027	-0.36	0.1520	-0.0122	-1.77	OE
LH7FE7		0.1669	-0.0092	-1.21	0.1554	-0.0088	-1.28	OE
LL2F7M	X	0.1813	0.0053	0.70	0.1863	0.0221	3.21	OE
LR6C2F		0.1813	0.0053	0.70	0.1673	0.0031	0.46	OE
M4CR8C		0.1787	0.0026	0.34	0.1623	-0.0019	-0.27	OE
MFWPP3		0.1840	0.0079	1.05	0.1750	0.0108	1.57	OE
MH9VPG		0.1787	0.0026	0.34	0.1667	0.0025	0.36	XX
MK3JJX		0.1657	-0.0104	-1.37	0.1570	-0.0072	-1.04	CO
MNEPJC		0.1853	0.0093	1.22	0.1723	0.0081	1.18	OE
NJ8AXV		0.1777	0.0016	0.21	0.1641	-0.0001	-0.01	OE
NZTZV9		0.1750	-0.0011	-0.14	0.1653	0.0011	0.17	CO
PAX6L6		0.1793	0.0033	0.43	0.1623	-0.0019	-0.27	OE
PCJ9T3		0.1670	-0.0091	-1.19	0.1557	-0.0085	-1.24	CO
PHDW2U		0.1776	0.0015	0.20	0.1648	0.0006	0.09	OE
PVDPH6		0.1853	0.0093	1.22	0.1777	0.0135	1.96	GD
Q86VN9		0.1853	0.0092	1.22	0.1680	0.0038	0.55	OE
QEPN7Z		0.1694	-0.0066	-0.87	0.1599	-0.0043	-0.62	CO
RJC37Q		0.1800	0.0039	0.52	0.1633	-0.0009	-0.12	OE
RV9XQ2		0.1781	0.0020	0.27	0.1662	0.0020	0.29	OE
RYNPHU		0.1673	-0.0087	-1.15	0.1590	-0.0052	-0.75	OE
T2QW8Y		0.1895	0.0134	1.77	0.1763	0.0121	1.76	OE
T698BV		0.1740	-0.0021	-0.27	0.1580	-0.0062	-0.90	OE
TG3DGM	*	0.1667	-0.0094	-1.24	0.1670	0.0028	0.41	XX
TMUHCC		0.1797	0.0036	0.48	0.1673	0.0031	0.46	OE
UDX2ZD		0.1743	-0.0017	-0.23	0.1677	0.0035	0.50	CO



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1600

1st Qtr 2026

Carbon & Low Alloy Steel, CARBON (C) CARBON (C)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
UEUHCA		0.1916	0.0155	2.05	0.1756	0.0114	1.66	OE
UZA38P		0.1807	0.0046	0.61	0.1693	0.0051	0.75	OE
VKCAYU		0.1727	-0.0034	-0.45	0.1650	0.0008	0.12	CI
WFYZAW	*	0.1533	-0.0227	-3.00	0.1433	-0.0209	-3.03	XX
WKQ6UZ		0.1683	-0.0077	-1.02	0.1603	-0.0039	-0.56	GD
WPXT82		0.1717	-0.0044	-0.58	0.1610	-0.0032	-0.46	OE
WRR99Y		0.1730	-0.0031	-0.40	0.1660	0.0018	0.26	XX
X6RQW4		0.1827	0.0066	0.87	0.1707	0.0065	0.94	XX
XTYA6G		0.1675	-0.0086	-1.13	0.1546	-0.0096	-1.40	OE
YQ3ZMZ		0.1633	-0.0127	-1.68	0.1600	-0.0042	-0.61	OE
YYMZFJ		0.1833	0.0073	0.96	0.1700	0.0058	0.84	OE
ZEVEBL		0.1763	0.0003	0.04	0.1687	0.0045	0.65	OE
ZKEQYM		0.1687	-0.0074	-0.97	0.1560	-0.0082	-1.19	OE
ZLB7BK		0.1736	-0.0025	-0.32	0.1618	-0.0024	-0.35	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.1761	Percent	0.1642	Percent
Std Dev Btwn Labs	0.0076	Percent	0.0069	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 103 of 108 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
IR	IR (Absorption / Detection)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1600

7V3LRB (X) - Data for both samples are high. Possible Systematic Error.

LL2F7M (X) - Data for sample L16 are high.



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1601

1st Qtr 2026

Carbon & Low Alloy Steel, MANGANESE (Mn) MANGANESE (Mn)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.6553	0.0207	2.01	0.8010	0.0227	2.09	OE
2LP44V		0.6323	-0.0023	-0.22	0.7850	0.0067	0.61	OE
344NDK		0.6223	-0.0123	-1.19	0.7580	-0.0203	-1.87	OE
3FF3KD		0.6503	0.0157	1.53	0.7913	0.0130	1.20	OE
3FX63L		0.6433	0.0087	0.85	0.7837	0.0053	0.49	XX
3H4M43		0.6087	-0.0259	-2.51	0.7590	-0.0193	-1.78	IC
3KV CYG		0.6377	0.0031	0.30	0.7792	0.0009	0.08	OE
3QWWUK		0.6430	0.0084	0.82	0.7867	0.0083	0.77	IC
437VV7		0.6300	-0.0046	-0.45	0.7767	-0.0017	-0.15	OE
4DNCQX		0.6257	-0.0089	-0.87	0.7710	-0.0073	-0.68	OE
4RJNBV		0.6273	-0.0073	-0.70	0.7623	-0.0160	-1.47	OE
4UA3KR		0.6329	-0.0017	-0.17	0.7827	0.0044	0.40	OE
6PELUJ		0.6270	-0.0076	-0.74	0.7673	-0.0110	-1.01	OE
6UNL8A		0.6334	-0.0012	-0.11	0.7795	0.0012	0.11	OE
6ZYQ7P		0.6396	0.0050	0.48	0.7854	0.0071	0.65	OE
7V3LRB		0.6267	-0.0079	-0.77	0.7667	-0.0117	-1.08	XX
7YLGTH		0.6590	0.0244	2.37	0.7976	0.0193	1.78	OE
88QWPF		0.6284	-0.0062	-0.60	0.7722	-0.0061	-0.57	OE
89MC2D		0.6141	-0.0205	-1.99	0.7563	-0.0220	-2.03	GD
8GTE34		0.6350	0.0004	0.04	0.7794	0.0010	0.09	XX
8NJHHM		0.6369	0.0023	0.22	0.7836	0.0052	0.48	OE
8QLFTF		0.6463	0.0117	1.14	0.7900	0.0117	1.07	OE
8VEU4H		0.6330	-0.0016	-0.15	0.7767	-0.0017	-0.15	XX
8YT6GM		0.6347	0.0001	0.01	0.7810	0.0027	0.24	OE
93TTJF		0.6353	0.0007	0.07	0.7753	-0.0030	-0.28	OE
9MEQCQ		0.6487	0.0141	1.36	0.7953	0.0170	1.57	OE
9XVDND		0.6294	-0.0052	-0.51	0.7659	-0.0124	-1.14	OE
A8HR6N		0.6277	-0.0069	-0.67	0.7727	-0.0057	-0.52	OE
AJ9LEW		0.6307	-0.0039	-0.38	0.7673	-0.0110	-1.01	OE
B6CJNG		0.6310	-0.0036	-0.35	0.7737	-0.0047	-0.43	OE
BJRHTH		0.6350	0.0004	0.04	0.7693	-0.0090	-0.83	GD
BPEE9R		0.6356	0.0010	0.10	0.7760	-0.0023	-0.21	XX
BTJZ9B		0.6320	-0.0026	-0.25	0.7730	-0.0053	-0.49	OE
BUPRQQ		0.6330	-0.0016	-0.15	0.7890	0.0107	0.98	XX
C3KUT3		0.6283	-0.0063	-0.61	0.7657	-0.0126	-1.16	IC
CLPRQN		0.6417	0.0071	0.69	0.7820	0.0037	0.34	OE
CNK2A7		0.6380	0.0034	0.33	0.7860	0.0077	0.71	XX
CREYLQ		0.6480	0.0134	1.30	0.7970	0.0187	1.72	GD
D3EYKF		0.6287	-0.0059	-0.58	0.7780	-0.0003	-0.03	IC
D3RQEH		0.6257	-0.0089	-0.86	0.7666	-0.0117	-1.08	AE
D8TNB6		0.6370	0.0024	0.23	0.7770	-0.0013	-0.12	OE
DDB3QV		0.6333	-0.0013	-0.12	0.7737	-0.0047	-0.43	OE
DPN6A8		0.6377	0.0031	0.30	0.7716	-0.0067	-0.62	OE
DPP3K4		0.6320	-0.0026	-0.25	0.7760	-0.0023	-0.22	OE
DTQ4ML		0.6219	-0.0127	-1.23	0.7670	-0.0114	-1.05	OE
E7QFGB		0.6300	-0.0046	-0.45	0.7767	-0.0017	-0.15	OE
EAPQDB		0.6387	0.0041	0.39	0.7770	-0.0013	-0.12	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1601

1st Qtr 2026

Carbon & Low Alloy Steel, MANGANESE (Mn) MANGANESE (Mn)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EMWFET		0.6320	-0.0026	-0.25	0.7760	-0.0023	-0.22	OE
EYE2VA		0.6287	-0.0059	-0.58	0.7700	-0.0083	-0.77	OE
F6V7W9		0.6379	0.0033	0.32	0.7837	0.0054	0.50	WD
F6V7YT		0.6313	-0.0033	-0.32	0.7713	-0.0070	-0.65	OE
F9UGUT		0.6330	-0.0016	-0.15	0.7730	-0.0053	-0.49	OE
FBWHT6		0.6379	0.0033	0.32	0.7795	0.0012	0.11	OE
FN6X4G		0.6160	-0.0186	-1.80	0.7593	-0.0190	-1.75	OE
G97LU4		0.6287	-0.0059	-0.58	0.7703	-0.0080	-0.74	OE
GCNMZJ		0.6384	0.0038	0.37	0.7941	0.0157	1.45	XX
GWZYY7		0.6450	0.0104	1.01	0.7820	0.0037	0.34	OE
HEQ6CJ		0.6390	0.0044	0.43	0.7810	0.0027	0.24	OE
HNGGWD		0.6350	0.0004	0.04	0.7763	-0.0020	-0.18	AE
HQKCFE		0.6194	-0.0152	-1.47	0.7639	-0.0145	-1.33	OE
HUPZYC	X	0.6247	-0.0099	-0.96	0.7480	-0.0303	-2.79	OE
J7Q6CG		0.6525	0.0179	1.73	0.8023	0.0240	2.21	GD
JFGQHF		0.6370	0.0024	0.23	0.7867	0.0083	0.77	GD
K46KHY		0.6370	0.0024	0.23	0.7840	0.0057	0.52	OE
K6XMYM		0.6207	-0.0139	-1.34	0.7720	-0.0063	-0.58	OE
KEKMCC		0.6288	-0.0058	-0.56	0.7725	-0.0059	-0.54	OE
KLLQRA		0.6191	-0.0155	-1.50	0.7554	-0.0229	-2.11	OE
LD8BAZ		0.6267	-0.0079	-0.77	0.7733	-0.0050	-0.46	OE
LH7FE7		0.6487	0.0141	1.36	0.7857	0.0073	0.67	OE
LL2F7M		0.6267	-0.0079	-0.77	0.7733	-0.0050	-0.46	OE
LR6C2F		0.6533	0.0187	1.82	0.8017	0.0233	2.15	OE
M4CR8C		0.6397	0.0051	0.49	0.7750	-0.0033	-0.31	OE
MFWPP3		0.6163	-0.0183	-1.77	0.7690	-0.0093	-0.86	OE
MH9VPG		0.6497	0.0151	1.46	0.7910	0.0127	1.17	XX
MK3JJX		0.6283	-0.0063	-0.61	0.7770	-0.0013	-0.12	IC
MNEPJC		0.6323	-0.0023	-0.22	0.7747	-0.0037	-0.34	OE
NJ8AXV		0.6363	0.0017	0.17	0.7787	0.0003	0.03	OE
NZTZV9		0.6357	0.0011	0.10	0.7863	0.0080	0.74	OE
PAX6L6		0.6373	0.0027	0.27	0.7873	0.0090	0.83	OE
PCJ9T3		0.6233	-0.0113	-1.09	0.7707	-0.0077	-0.71	OE
PHDW2U		0.6473	0.0127	1.24	0.7911	0.0128	1.18	OE
PVDPH6	*	0.6277	-0.0069	-0.67	0.7510	-0.0273	-2.52	GD
Q86VN9		0.6429	0.0083	0.81	0.7733	-0.0050	-0.46	OE
QEPN7Z		0.6250	-0.0096	-0.93	0.7665	-0.0118	-1.09	DR
RJC37Q		0.6520	0.0174	1.69	0.7997	0.0213	1.96	OE
RV9XQ2		0.6575	0.0229	2.22	0.7958	0.0175	1.61	OE
RYNPHU		0.6293	-0.0053	-0.51	0.7770	-0.0013	-0.12	OE
T2QW8Y	*	0.6633	0.0287	2.78	0.8052	0.0269	2.47	OE
T698BV		0.6360	0.0014	0.14	0.7750	-0.0033	-0.31	OE
TG3DGM		0.6307	-0.0039	-0.38	0.7760	-0.0023	-0.22	XX
TMUHCC		0.6323	-0.0023	-0.22	0.7770	-0.0013	-0.12	OE
UDX2ZD		0.6327	-0.0019	-0.19	0.7720	-0.0063	-0.58	IC
UEUHCA		0.6444	0.0098	0.95	0.7848	0.0064	0.59	OE
UZA38P		0.6350	0.0004	0.04	0.7800	0.0017	0.15	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153
1st Qtr 2026

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
VKCAYU		0.6437	0.0091	0.88	0.7847	0.0063	0.58	OE
WFYZAW		0.6100	-0.0246	-2.39	0.7633	-0.0150	-1.38	XX
WKQ6UZ	*	0.6180	-0.0166	-1.61	0.7740	-0.0043	-0.40	GD
WPXT82		0.6377	0.0031	0.30	0.7783	0.0000	0.00	OE
WRR99Y		0.6317	-0.0029	-0.28	0.7837	0.0053	0.49	XX
X6RQW4		0.6367	0.0021	0.20	0.7733	-0.0050	-0.46	XX
XTYA6G		0.6376	0.0030	0.29	0.7769	-0.0014	-0.13	OE
YQ3ZMZ		0.6200	-0.0146	-1.42	0.7700	-0.0083	-0.77	OE
YYMZFJ		0.6400	0.0054	0.52	0.7833	0.0050	0.46	OE
ZEVEBL	*	0.6323	-0.0023	-0.22	0.7907	0.0123	1.14	OE
ZKEQYM		0.6330	-0.0016	-0.15	0.7663	-0.0120	-1.11	OE
ZLB7BK		0.6549	0.0203	1.97	0.8083	0.0299	2.76	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.6346	Percent	0.7783	Percent
Stnd Dev Btwn Labs	0.0103	Percent	0.0109	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 104 of 106 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1601

HUPZYC (X) - Data for sample L16 are low.

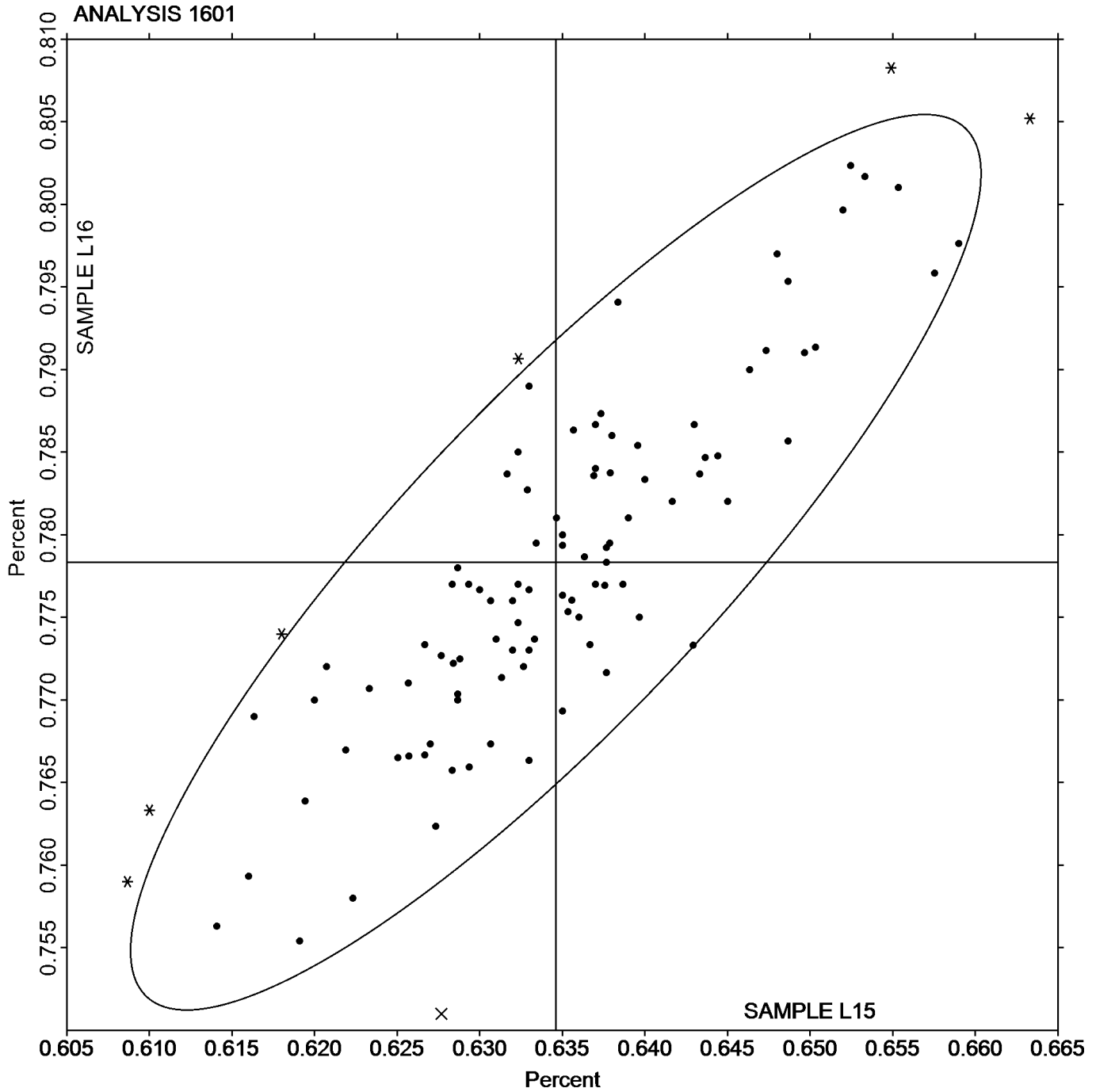


Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

SAMPLE L15
0.6346 Percent

SAMPLE L16
0.7783 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1602

1st Qtr 2026

Carbon & Low Alloy Steel, PHOSPHORUS (P) PHOSPHORUS (P)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.00603	-0.00174	-1.63	0.0120	-0.0018	-1.56	OE
2LP44V		0.00977	0.00199	1.86	0.0161	0.0023	2.03	OE
344NDK		0.00883	0.00106	0.99	0.0143	0.0006	0.49	OE
3FF3KD		0.00743	-0.00034	-0.32	0.0142	0.0004	0.34	OE
3FX63L		0.00697	-0.00081	-0.76	0.0138	0.0000	0.02	XX
3H4M43	*	0.00497	-0.00281	-2.62	0.0114	-0.0024	-2.11	OE
3KV CYG		0.00790	0.00012	0.12	0.0148	0.0010	0.87	OE
3QWWUK		0.00647	-0.00131	-1.22	0.0130	-0.0008	-0.68	IC
437VV7		0.00800	0.00022	0.21	0.0140	0.0002	0.19	OE
4DNCQX		0.00763	-0.00014	-0.13	0.0130	-0.0008	-0.68	AE
4RJNBV		0.0100	0.00222	2.08	0.0150	0.0012	1.07	OE
4UA3KR		0.00830	0.00052	0.49	0.0140	0.0002	0.18	OE
6PELUJ		0.0104	0.00259	2.42	0.0151	0.0013	1.16	OE
6UNL8A		0.00797	0.00019	0.18	0.0143	0.0005	0.46	OE
6ZYQ7P		0.00840	0.00062	0.58	0.0151	0.0013	1.16	OE
7V3LRB	X	0.0123	0.00456	4.26	0.0157	0.0019	1.65	XX
7YLGTH		0.00623	-0.00154	-1.44	0.0118	-0.0020	-1.76	OE
88QWPF		0.00803	0.00026	0.24	0.0132	-0.0006	-0.53	OE
89MC2D		0.00590	-0.00188	-1.75	0.0114	-0.0024	-2.08	GD
8GTE34		0.00767	-0.00011	-0.10	0.0141	0.0003	0.25	XX
8NJHHM		0.00815	0.00037	0.35	0.0144	0.0006	0.52	OE
8QLFTF		0.00740	-0.00038	-0.35	0.0135	-0.0003	-0.24	OE
8VEU4H		0.00813	0.00036	0.33	0.0147	0.0009	0.81	XX
8YT6GM		0.00807	0.00029	0.27	0.0143	0.0005	0.43	OE
93TTJF		0.00760	-0.00018	-0.16	0.0127	-0.0010	-0.91	OE
9MEQCQ		0.00803	0.00026	0.24	0.0130	-0.0008	-0.68	OE
9XVDND		0.00740	-0.00038	-0.35	0.0136	-0.0001	-0.13	OE
A8HR6N		0.00483	-0.00294	-2.75	0.0113	-0.0025	-2.20	OE
AJ9LEW		0.00700	-0.00078	-0.73	0.0127	-0.0011	-0.97	OE
B6CJNG		0.00767	-0.00011	-0.10	0.0117	-0.0021	-1.82	OE
BJRHTH		0.00889	0.00111	1.04	0.0153	0.0015	1.33	GD
BPEE9R		0.00816	0.00039	0.36	0.0122	-0.0016	-1.40	XX
BTJZ9B		0.00680	-0.00098	-0.91	0.0139	0.0001	0.11	OE
BUPRQQ		0.00867	0.00089	0.83	0.0140	0.0002	0.19	XX
C3KUT3		0.00713	-0.00064	-0.60	0.0132	-0.0006	-0.53	IC
CLPRQN		0.00870	0.00092	0.86	0.0131	-0.0006	-0.56	OE
CNK2A7		0.00673	-0.00104	-0.97	0.0129	-0.0008	-0.74	XX
CREYLQ		0.00600	-0.00178	-1.66	0.0120	-0.0018	-1.56	GD
D3EYKF		0.00683	-0.00094	-0.88	0.0128	-0.0009	-0.83	IC
D3RQEH		0.00884	0.00106	0.99	0.0151	0.0013	1.15	AE
D8TNB6		0.00800	0.00022	0.21	0.0147	0.0009	0.78	OE
DDB3QV		0.00720	-0.00058	-0.54	0.0130	-0.0008	-0.71	OE
DPN6A8		0.00783	0.00006	0.05	0.0139	0.0002	0.14	OE
DPP3K4		0.00810	0.00032	0.30	0.0149	0.0011	0.98	OE
DTQ4ML		0.00730	-0.00048	-0.44	0.0139	0.0002	0.14	OE
E7QFGB	X	0.0127	0.00489	4.57	0.0197	0.0059	5.15	OE
EAPQDB		0.00843	0.00066	0.61	0.0147	0.0009	0.81	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1602

1st Qtr 2026

Carbon & Low Alloy Steel, PHOSPHORUS (P) PHOSPHORUS (P)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EMWFET		0.00777	-0.00001	-0.01	0.0137	-0.0001	-0.10	OE
EYE2VA		0.00777	-0.00001	-0.01	0.0130	-0.0008	-0.71	OE
F6V7W9		0.00693	-0.00084	-0.79	0.0117	-0.0021	-1.82	WD
F6V7YT		0.00657	-0.00121	-1.13	0.0121	-0.0017	-1.47	OE
F9UGUT		0.00737	-0.00041	-0.38	0.0134	-0.0003	-0.30	OE
FBWHT6		0.00800	0.00022	0.21	0.0138	0.0000	-0.01	OE
FN6X4G	*	0.0109	0.00316	2.95	0.0170	0.0032	2.82	OE
G97LU4		0.00743	-0.00034	-0.32	0.0152	0.0014	1.24	OE
GCNMZJ	X	0.00477	-0.00301	-2.81	0.0142	0.0004	0.37	XX
GWZYY7		0.00800	0.00022	0.21	0.0150	0.0012	1.07	OE
HEQ6CJ		0.00777	-0.00001	-0.01	0.0137	-0.0001	-0.07	OE
HNGGWD		0.00773	-0.00004	-0.04	0.0139	0.0001	0.11	AE
HQKCFE		0.00710	-0.00068	-0.63	0.0131	-0.0006	-0.56	OE
HUPZYC		0.00850	0.00072	0.68	0.0143	0.0006	0.49	OE
J7Q6CG		0.00767	-0.00011	-0.10	0.0139	0.0001	0.06	GD
JFGQHF		0.00849	0.00072	0.67	0.0141	0.0003	0.25	GD
K46KHY		0.00900	0.00122	1.14	0.0150	0.0012	1.07	OE
K6XMYM		0.00653	-0.00125	-1.17	0.0142	0.0005	0.40	OE
KEKMCC		0.00881	0.00104	0.97	0.0152	0.0014	1.26	OE
KLLQRA		0.00650	-0.00128	-1.19	0.0110	-0.0028	-2.43	OE
LD8BAZ		0.00683	-0.00094	-0.88	0.0131	-0.0007	-0.59	OE
LH7FE7		0.00800	0.00022	0.21	0.0143	0.0006	0.49	OE
LL2F7M	X	0.00553	-0.00224	-2.09	0.0151	0.0013	1.13	OE
LR6C2F		0.00653	-0.00124	-1.16	0.0125	-0.0013	-1.12	OE
M4CR8C		0.00767	-0.00011	-0.10	0.0133	-0.0004	-0.39	OE
MFWPP3		0.00913	0.00136	1.27	0.0133	-0.0004	-0.39	OE
MH9VPG	X	0.00933	0.00156	1.45	0.0102	-0.0035	-3.10	XX
MNEPJC		0.00753	-0.00024	-0.23	0.0137	0.0000	-0.04	OE
NJ8AXV		0.00773	-0.00004	-0.04	0.0131	-0.0007	-0.59	OE
NZTZV9		0.00967	0.00189	1.77	0.0150	0.0012	1.07	OE
PAX6L6		0.00767	-0.00011	-0.10	0.0134	-0.0004	-0.33	OE
PCJ9T3	X	0.0117	0.00396	3.70	0.0193	0.0055	4.80	OE
PHDW2U		0.00813	0.00036	0.33	0.0142	0.0004	0.37	OE
PVDPH6		0.00800	0.00022	0.21	0.0150	0.0012	1.07	GD
Q86VN9		0.00767	-0.00011	-0.10	0.0143	0.0006	0.49	OE
QEPN7Z		0.00830	0.00052	0.49	0.0139	0.0001	0.08	DR
RJC37Q		0.00733	-0.00044	-0.41	0.0140	0.0002	0.19	OE
RV9XQ2		0.00863	0.00086	0.80	0.0142	0.0005	0.40	OE
RYNPHU		0.00747	-0.00031	-0.29	0.0133	-0.0005	-0.42	OE
T2QW8Y		0.00800	0.00022	0.21	0.0145	0.0007	0.63	OE
T698BV		0.00880	0.00102	0.96	0.0138	0.0000	0.02	OE
TG3DGM	*	0.0110	0.00322	3.01	0.0170	0.0032	2.82	XX
TMUHCC		0.00600	-0.00178	-1.66	0.0120	-0.0018	-1.56	OE
UDX2ZD		0.00760	-0.00018	-0.16	0.0140	0.0003	0.22	IC
UEUHCA		0.00783	0.00006	0.05	0.0140	0.0002	0.19	OE
UZA38P		0.00883	0.00106	0.99	0.0150	0.0012	1.07	OE
VKCAYU		0.00803	0.00026	0.24	0.0141	0.0004	0.31	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153
1st Qtr 2026

Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WFYZAW	X	0.00400	-0.00378	-3.53	0.00967	-0.0041	-3.60	XX
WKQ6UZ		0.00700	-0.00078	-0.73	0.0137	-0.0001	-0.10	GD
WPXT82		0.00627	-0.00151	-1.41	0.0136	-0.0001	-0.13	OE
WRR99Y		0.00800	0.00022	0.21	0.0137	-0.0001	-0.10	XX
X6RQW4		0.00900	0.00122	1.14	0.0150	0.0012	1.07	XX
XTYA6G		0.00720	-0.00058	-0.54	0.0145	0.0007	0.60	OE
YQ3ZMZ	*	0.0100	0.00222	2.08	0.0133	-0.0004	-0.39	OE
YYMZFJ		0.00733	-0.00044	-0.41	0.0133	-0.0004	-0.39	OE
ZEVEBL		0.00807	0.00029	0.27	0.0148	0.0010	0.89	OE
ZKEQYM	X	0.00500	-0.00278	-2.59	0.00767	-0.0061	-5.35	OE
ZLB7BK		0.00763	-0.00014	-0.13	0.0137	-0.0001	-0.07	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.00778	Percent	0.0138	Percent
Std Dev Btwn Labs	0.00107	Percent	0.0011	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 96 of 105 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1602

- 7V3LRB (X) - Data for sample L15 are high. Inconsistent within the determinations of sample L15.
- E7QFGB (X) - Data for both samples are high. Possible Systematic Error.
- GCNMZJ (X) - Data for sample L15 are low.
- LL2F7M (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- MH9VPG (X) - Data for sample L16 are low. Inconsistent within the determinations of sample L16.
- PCJ9T3 (X) - Data for both samples are high. Possible Systematic Error.
- WFYZAW (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample L15.
- ZKEQYM (X) - Data for sample L16 are low.

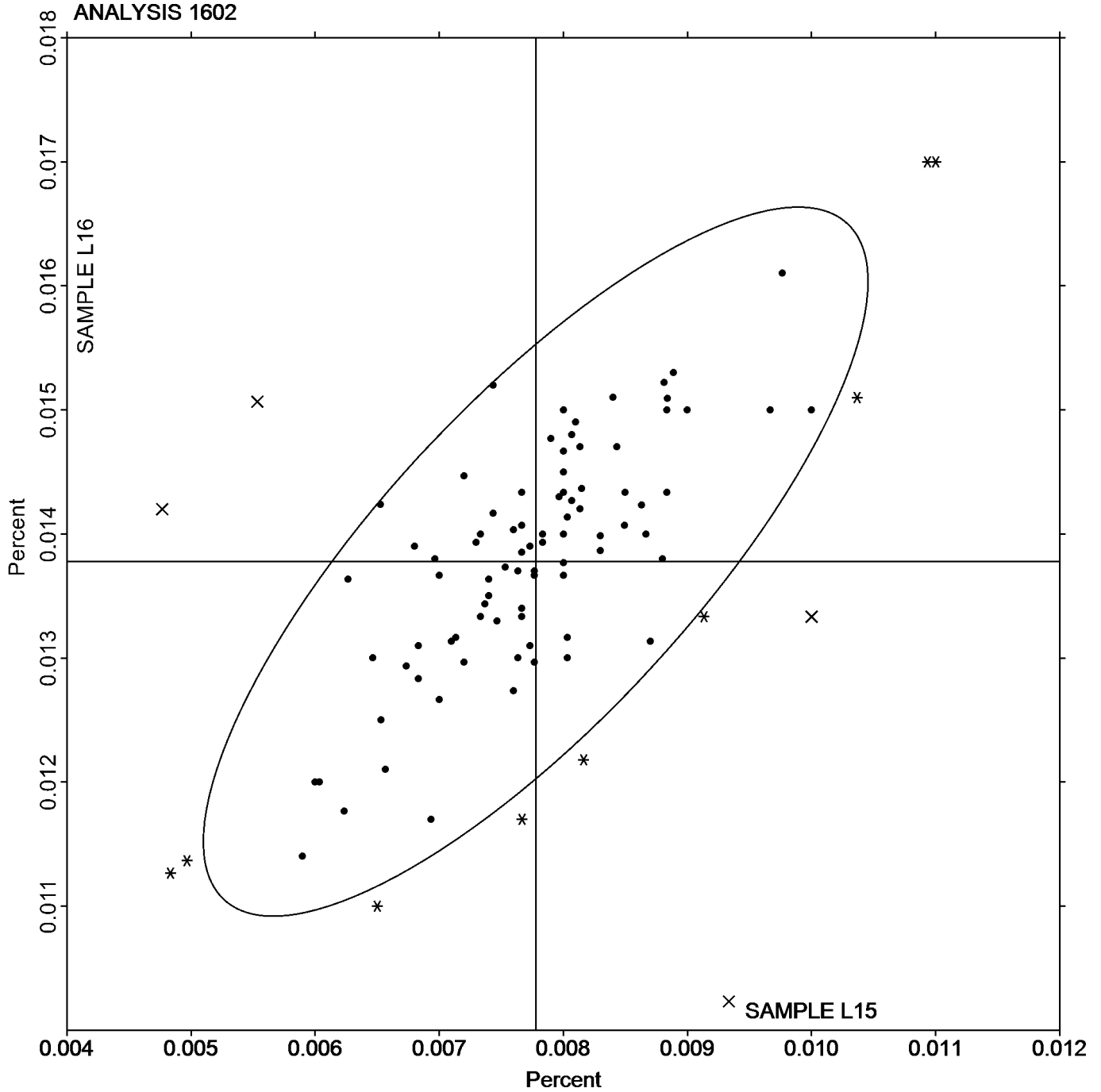


Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

SAMPLE L15
0.00778 Percent

SAMPLE L16
0.0138 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1603

1st Qtr 2026

Carbon & Low Alloy Steel, SULFUR (S) SULFUR (S)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ	*	0.0350	0.0059	2.90	0.0273	0.0045	2.75	OE
2LP44V		0.0292	0.0001	0.04	0.0231	0.0003	0.16	OE
344NDK		0.0339	0.0048	2.35	0.0252	0.0024	1.45	OE
3FF3KD		0.0276	-0.0015	-0.74	0.0215	-0.0013	-0.82	OE
3FX63L		0.0276	-0.0015	-0.72	0.0217	-0.0011	-0.68	XX
3H4M43		0.0274	-0.0016	-0.81	0.0208	-0.0020	-1.25	CO
3KV CYG		0.0312	0.0021	1.04	0.0246	0.0018	1.08	OE
3QWWUK		0.0309	0.0018	0.89	0.0233	0.0005	0.28	IC
437VV7		0.0293	0.0003	0.13	0.0217	-0.0012	-0.72	CI
4DNCQX		0.0283	-0.0008	-0.40	0.0216	-0.0012	-0.74	CI
4RJNBV		0.0250	-0.0041	-2.00	0.0210	-0.0018	-1.13	OE
4UA3KR		0.0294	0.0003	0.16	0.0236	0.0008	0.46	OE
6PELUJ		0.0269	-0.0021	-1.05	0.0211	-0.0017	-1.07	OE
6UNL8A		0.0329	0.0038	1.86	0.0239	0.0010	0.63	OE
6ZYQ7P		0.0326	0.0036	1.74	0.0248	0.0020	1.22	OE
7V3LRB		0.0270	-0.0021	-1.02	0.0240	0.0012	0.71	XX
7YLGTH		0.0251	-0.0040	-1.95	0.0204	-0.0024	-1.48	OE
88QWPF		0.0279	-0.0012	-0.58	0.0222	-0.0006	-0.37	OE
89MC2D		0.0262	-0.0029	-1.41	0.0194	-0.0034	-2.11	GD
8GTE34		0.0308	0.0018	0.86	0.0233	0.0005	0.28	XX
8NJHHM		0.0289	-0.0001	-0.07	0.0233	0.0004	0.26	OE
8QLFTF		0.0290	0.0000	-0.02	0.0222	-0.0006	-0.39	OE
8VEU4H		0.0292	0.0001	0.06	0.0219	-0.0010	-0.60	XX
8YT6GM		0.0287	-0.0004	-0.18	0.0236	0.0008	0.48	CO
93TTJF		0.0306	0.0016	0.76	0.0218	-0.0010	-0.62	OE
9MEQCQ		0.0297	0.0006	0.29	0.0240	0.0012	0.71	OE
9XVDND		0.0294	0.0003	0.14	0.0217	-0.0011	-0.68	CO
A8HR6N		0.0306	0.0016	0.76	0.0240	0.0012	0.71	OE
AJ9LEW		0.0300	0.0009	0.45	0.0253	0.0025	1.53	OE
B6CJNG	X	0.0289	-0.0002	-0.10	0.0179	-0.0050	-3.05	OE
BJRHTH		0.0309	0.0018	0.89	0.0233	0.0004	0.26	GD
BPEE9R		0.0285	-0.0006	-0.27	0.0236	0.0008	0.47	XX
BTJZ9B		0.0304	0.0013	0.65	0.0243	0.0015	0.89	OE
BUPRQQ		0.0287	-0.0004	-0.20	0.0227	-0.0002	-0.11	XX
C3KUT3		0.0281	-0.0010	-0.48	0.0214	-0.0015	-0.91	CI
CLPRQN	*	0.0287	-0.0004	-0.20	0.0189	-0.0039	-2.42	OE
CNK2A7		0.0297	0.0007	0.32	0.0223	-0.0006	-0.35	XX
CREYLQ		0.0270	-0.0021	-1.02	0.0210	-0.0018	-1.13	GD
D3EYKF		0.0301	0.0010	0.48	0.0230	0.0002	0.12	CI
D3RQEH		0.0266	-0.0025	-1.23	0.0196	-0.0032	-1.97	CI
D8TNB6		0.0317	0.0026	1.27	0.0240	0.0012	0.71	OE
DDB3QV		0.0278	-0.0013	-0.63	0.0217	-0.0012	-0.72	OE
DPN6A8		0.0301	0.0010	0.48	0.0221	-0.0007	-0.46	IR
DPP3K4		0.0292	0.0001	0.06	0.0213	-0.0015	-0.95	CO
DTQ4ML		0.0264	-0.0027	-1.33	0.0217	-0.0011	-0.68	OE
E7QFGB	X	0.0327	0.0036	1.76	0.0283	0.0055	3.37	OE
EAPQDB		0.0296	0.0005	0.24	0.0197	-0.0031	-1.91	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1603

1st Qtr 2026

Carbon & Low Alloy Steel, SULFUR (S) SULFUR (S)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EMWFET		0.0300	0.0009	0.45	0.0228	0.0000	-0.03	OE
EYE2VA		0.0288	-0.0002	-0.12	0.0221	-0.0007	-0.46	OE
F6V7W9		0.0285	-0.0006	-0.28	0.0219	-0.0009	-0.56	CI
F6V7YT		0.0268	-0.0023	-1.13	0.0201	-0.0027	-1.68	OE
F9UGUT		0.0289	-0.0002	-0.09	0.0233	0.0004	0.26	OE
FBWHT6		0.0298	0.0007	0.34	0.0233	0.0005	0.28	OE
FN6X4G		0.0289	-0.0002	-0.09	0.0230	0.0001	0.08	OE
G97LU4		0.0297	0.0006	0.29	0.0244	0.0016	0.95	OE
GCNMZJ		0.0271	-0.0019	-0.95	0.0247	0.0019	1.14	XX
GWZYY7		0.0260	-0.0031	-1.51	0.0210	-0.0018	-1.13	OE
HEQ6CJ		0.0289	-0.0002	-0.10	0.0211	-0.0018	-1.09	OE
HNGGWD		0.0297	0.0007	0.32	0.0226	-0.0003	-0.17	CI
HQKCFE		0.0272	-0.0019	-0.92	0.0216	-0.0012	-0.74	OE
HUPZYC		0.0297	0.0006	0.29	0.0243	0.0015	0.91	OE
J7Q6CG		0.0312	0.0021	1.04	0.0249	0.0020	1.23	GD
JFGQHF		0.0300	0.0009	0.44	0.0230	0.0002	0.12	GD
K46KHY		0.0250	-0.0041	-2.00	0.0203	-0.0025	-1.54	CI
K6XMYM		0.0267	-0.0023	-1.14	0.0233	0.0005	0.30	CO
KEKMCC		0.0301	0.0010	0.48	0.0263	0.0034	2.10	OE
KLLQRA		0.0265	-0.0026	-1.26	0.0198	-0.0030	-1.87	OE
KZM9GN		0.0326	0.0035	1.72	0.0244	0.0015	0.94	CI
LD8BAZ		0.0294	0.0003	0.16	0.0235	0.0007	0.40	OE
LL2F7M	X	0.0340	0.0049	2.41	0.0323	0.0095	5.82	OE
LR6C2F		0.0298	0.0008	0.37	0.0231	0.0003	0.18	OE
M4CR8C		0.0317	0.0026	1.27	0.0247	0.0018	1.12	OE
MFWPP3		0.0327	0.0036	1.76	0.0267	0.0038	2.34	OE
MH9VPG	X	0.0223	-0.0067	-3.30	0.0180	-0.0048	-2.97	XX
MK3JJX		0.0290	0.0000	-0.02	0.0233	0.0005	0.28	CO
MNEPJC		0.0333	0.0042	2.05	0.0244	0.0015	0.93	OE
NJ8AXV		0.0296	0.0005	0.24	0.0232	0.0004	0.24	OE
NZTZV9		0.0277	-0.0014	-0.69	0.0220	-0.0008	-0.52	OE
PAX6L6		0.0264	-0.0026	-1.29	0.0199	-0.0029	-1.78	OE
PCJ9T3		0.0296	0.0006	0.27	0.0223	-0.0006	-0.35	CO
PHDW2U		0.0313	0.0022	1.09	0.0229	0.0001	0.03	OE
PVDPH6		0.0293	0.0003	0.13	0.0227	-0.0002	-0.11	GD
QEPN7Z		0.0279	-0.0012	-0.60	0.0214	-0.0015	-0.92	CO
RJC37Q		0.0307	0.0016	0.78	0.0233	0.0005	0.30	OE
RV9XQ2		0.0278	-0.0012	-0.61	0.0232	0.0003	0.20	OE
RYNPHU		0.0254	-0.0037	-1.82	0.0210	-0.0018	-1.13	OE
T2QW8Y		0.0313	0.0022	1.09	0.0254	0.0026	1.57	OE
T698BV		0.0341	0.0050	2.46	0.0258	0.0030	1.81	OE
TG3DGM		0.0290	-0.0001	-0.04	0.0257	0.0028	1.73	XX
TMUHCC		0.0290	-0.0001	-0.04	0.0233	0.0005	0.30	OE
UDX2ZD		0.0280	-0.0010	-0.51	0.0220	-0.0008	-0.52	CO
UEUHCA		0.0301	0.0010	0.50	0.0237	0.0009	0.55	OE
UZA38P		0.0275	-0.0016	-0.79	0.0231	0.0003	0.16	OE
VKCAYU		0.0294	0.0003	0.16	0.0237	0.0008	0.50	CI



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1603

1st Qtr 2026

**Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)**

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WFYZAW		0.0257	-0.0034	-1.67	0.0213	-0.0015	-0.93	XX
WKQ6UZ		0.0263	-0.0027	-1.34	0.0227	-0.0002	-0.11	GD
WPXT82		0.0256	-0.0035	-1.70	0.0209	-0.0019	-1.17	OE
WRR99Y		0.0297	0.0006	0.29	0.0240	0.0012	0.71	XX
X6RQW4		0.0293	0.0003	0.13	0.0240	0.0012	0.71	XX
XTYA6G		0.0285	-0.0006	-0.28	0.0227	-0.0001	-0.09	OE
YQ3ZMZ		0.0307	0.0016	0.78	0.0247	0.0018	1.12	OE
YYMZFJ		0.0297	0.0006	0.29	0.0243	0.0015	0.91	OE
ZEVEBL		0.0292	0.0001	0.06	0.0239	0.0011	0.65	OE
ZKEQYM		0.0280	-0.0011	-0.53	0.0203	-0.0025	-1.54	OE
ZLB7BK		0.0282	-0.0009	-0.45	0.0229	0.0001	0.06	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.0291	Percent	0.0228	Percent
Stnd Dev Btwn Labs	0.0020	Percent	0.0016	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 100 of 105 reporting participants

Key to Method Codes Reported by Participants

- CI Combustion / IR
- GD Spectrometry - Glow Discharge (GDS)
- IR IR (Absorption / Detection)
- XX Please Indicate Method Used for Current Element
- CO Combustion
- IC Spectrometry - Inductively Coupled Plasma (ICP)
- OE Spectrometry - Optical Emission (OES)

Comments on Assigned Data Flags for Test #1603

- B6CJNG (X) - Data for sample L16 are low.
- E7QFGB (X) - Data for sample L16 are high.
- LL2F7M (X) - Data for sample L16 are high. Inconsistent within the determinations of both samples.
- MH9VPG (X) - Data for both samples are low.



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1604

1st Qtr 2026

Carbon & Low Alloy Steel, SILICON (Si) SILICON (Si)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.2263	0.0005	0.08	0.2877	-0.0026	-0.34	OE
2LP44V		0.2327	0.0068	1.08	0.2983	0.0081	1.06	OE
344NDK		0.2223	-0.0035	-0.55	0.2857	-0.0046	-0.60	OE
3FF3KD		0.2360	0.0102	1.60	0.3007	0.0104	1.37	OE
3FX63L		0.2283	0.0025	0.39	0.2913	0.0011	0.14	XX
3H4M43		0.2207	-0.0052	-0.81	0.2863	-0.0039	-0.52	IC
3KV CYG		0.2288	0.0030	0.47	0.2897	-0.0005	-0.07	OE
3QWWUK		0.2190	-0.0068	-1.07	0.2863	-0.0039	-0.52	IC
437VV7		0.2230	-0.0028	-0.44	0.2897	-0.0006	-0.08	OE
4DNCQX		0.2257	-0.0002	-0.02	0.2870	-0.0033	-0.43	OE
4RJNBV		0.2223	-0.0035	-0.55	0.2847	-0.0056	-0.74	OE
4UA3KR		0.2250	-0.0008	-0.13	0.2932	0.0030	0.39	OE
6PELUJ		0.2230	-0.0028	-0.44	0.2880	-0.0023	-0.30	OE
6UNL8A		0.2253	-0.0006	-0.09	0.2984	0.0081	1.07	OE
6ZYQ7P		0.2276	0.0017	0.27	0.2929	0.0026	0.34	OE
7V3LRB		0.2233	-0.0025	-0.39	0.2900	-0.0003	-0.03	XX
7YLGTH	*	0.2406	0.0148	2.32	0.3119	0.0217	2.85	OE
88QWPF		0.2240	-0.0018	-0.28	0.2897	-0.0006	-0.08	OE
89MC2D	X	0.2565	0.0307	4.82	0.3176	0.0273	3.60	XX
8GTE34		0.2232	-0.0026	-0.41	0.2872	-0.0031	-0.40	XX
8NJHHM		0.2191	-0.0067	-1.06	0.2830	-0.0073	-0.95	XX
8QLFTF		0.2257	-0.0002	-0.02	0.2963	0.0061	0.80	OE
8VEU4H		0.2197	-0.0062	-0.97	0.2820	-0.0083	-1.09	XX
8YT6GM		0.2257	-0.0002	-0.02	0.2890	-0.0013	-0.16	OE
93TTJF		0.2120	-0.0138	-2.17	0.2757	-0.0146	-1.92	OE
9MEQCQ		0.2097	-0.0162	-2.54	0.2730	-0.0173	-2.27	OE
9XVDND		0.2213	-0.0045	-0.71	0.2857	-0.0046	-0.60	OE
A8HR6N		0.2260	0.0002	0.03	0.2907	0.0004	0.05	OE
AJ9LEW		0.2287	0.0028	0.45	0.2907	0.0004	0.05	OE
B6CJNG		0.2253	-0.0005	-0.08	0.2927	0.0024	0.32	OE
BJRHTH		0.2250	-0.0008	-0.13	0.2873	-0.0029	-0.38	GD
BPEE9R		0.2202	-0.0056	-0.88	0.2922	0.0019	0.25	XX
BTJZ9B		0.2330	0.0072	1.13	0.2980	0.0077	1.02	OE
BUPRQQ		0.2223	-0.0035	-0.55	0.2837	-0.0066	-0.87	XX
C3KUT3		0.2293	0.0035	0.55	0.2896	-0.0006	-0.08	GR
CLPRQN		0.2293	0.0035	0.55	0.2943	0.0041	0.54	OE
CNK2A7		0.2210	-0.0048	-0.76	0.2830	-0.0073	-0.95	XX
CREYLQ		0.2160	-0.0098	-1.54	0.2760	-0.0143	-1.88	GD
D3EYKF		0.2217	-0.0042	-0.65	0.2833	-0.0069	-0.91	IC
D3RQEH		0.2363	0.0105	1.65	0.3001	0.0099	1.30	AE
D8TNB6		0.2317	0.0058	0.92	0.2933	0.0031	0.41	OE
DDB3QV		0.2227	-0.0032	-0.50	0.2880	-0.0023	-0.30	OE
DPN6A8		0.2281	0.0022	0.35	0.2913	0.0011	0.14	OE
DPP3K4		0.2240	-0.0018	-0.29	0.2890	-0.0013	-0.16	OE
DTQ4ML		0.2223	-0.0035	-0.55	0.2840	-0.0063	-0.83	OE
E7QFGB	X	0.2603	0.0345	5.42	0.3400	0.0497	6.55	OE
EAPQDB		0.2300	0.0042	0.66	0.2929	0.0026	0.34	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1604

1st Qtr 2026

Carbon & Low Alloy Steel, SILICON (Si) SILICON (Si)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EMWFET		0.2230	-0.0028	-0.44	0.2850	-0.0053	-0.69	OE
EYE2VA		0.2333	0.0075	1.18	0.2993	0.0091	1.20	OE
F6V7W9		0.2224	-0.0035	-0.54	0.2857	-0.0046	-0.60	OE
F6V7YT		0.2200	-0.0058	-0.91	0.2813	-0.0089	-1.17	OE
F9UGUT		0.2250	-0.0008	-0.13	0.2897	-0.0006	-0.08	OE
FBWHT6		0.2244	-0.0015	-0.23	0.2892	-0.0011	-0.14	OE
FN6X4G		0.2253	-0.0005	-0.08	0.2940	0.0037	0.49	OE
G97LU4		0.2350	0.0092	1.44	0.2993	0.0091	1.20	OE
GCNMZJ		0.2305	0.0047	0.74	0.2935	0.0032	0.43	XX
GWZYY7		0.2210	-0.0048	-0.76	0.2850	-0.0053	-0.69	OE
HEQ6CJ		0.2263	0.0005	0.08	0.2873	-0.0029	-0.38	OE
HNGGWD		0.2253	-0.0005	-0.08	0.2853	-0.0049	-0.65	AE
HQKCFE		0.2234	-0.0025	-0.39	0.2878	-0.0025	-0.32	OE
HUPZYC	X	0.2317	0.0058	0.92	0.2847	-0.0056	-0.74	OE
J7Q6CG		0.2431	0.0173	2.72	0.3095	0.0193	2.54	GD
JFGQHF		0.2350	0.0092	1.44	0.2983	0.0081	1.06	GD
K46KHY		0.2297	0.0038	0.60	0.2953	0.0051	0.67	OE
K6XMYM		0.2197	-0.0062	-0.97	0.2856	-0.0047	-0.62	OE
KEKMCC		0.2216	-0.0042	-0.66	0.2815	-0.0088	-1.15	OE
KLLQRA		0.2216	-0.0042	-0.66	0.2828	-0.0075	-0.99	OE
LD8BAZ		0.2223	-0.0035	-0.55	0.2877	-0.0026	-0.34	OE
LL2F7M		0.2333	0.0075	1.18	0.2993	0.0091	1.20	OE
LR6C2F		0.2213	-0.0045	-0.71	0.2840	-0.0063	-0.82	OE
M4CR8C		0.2293	0.0035	0.55	0.2953	0.0051	0.67	OE
MFWPP3		0.2263	0.0005	0.08	0.2960	0.0057	0.76	XX
MH9VPG		0.2157	-0.0102	-1.60	0.2767	-0.0136	-1.79	XX
MK3JJX		0.2320	0.0062	0.97	0.3010	0.0107	1.42	IC
MNEPJC		0.2260	0.0002	0.03	0.2903	0.0001	0.01	OE
NJ8AXV		0.2275	0.0017	0.26	0.2854	-0.0049	-0.64	OE
NZTZV9		0.2210	-0.0048	-0.76	0.2877	-0.0026	-0.34	OE
PAX6L6		0.2193	-0.0065	-1.02	0.2803	-0.0099	-1.31	OE
PCJ9T3		0.2400	0.0142	2.23	0.3077	0.0174	2.29	OE
PHDW2U		0.2275	0.0017	0.27	0.2903	0.0000	0.00	OE
PVDPH6		0.2430	0.0172	2.70	0.3063	0.0161	2.12	GD
Q86VN9		0.2238	-0.0021	-0.32	0.2817	-0.0086	-1.13	OE
QEPN7Z	*	0.2191	-0.0068	-1.06	0.3016	0.0113	1.49	DR
RJC37Q		0.2187	-0.0072	-1.12	0.2820	-0.0083	-1.09	OE
RV9XQ2		0.2329	0.0071	1.11	0.2912	0.0009	0.12	OE
RYNPHU		0.2303	0.0045	0.71	0.2990	0.0087	1.15	OE
T2QW8Y		0.2332	0.0074	1.16	0.2968	0.0065	0.86	OE
T698BV		0.2280	0.0022	0.34	0.2920	0.0017	0.23	OE
TG3DGM		0.2200	-0.0058	-0.91	0.2913	0.0011	0.14	XX
TMUHCC		0.2257	-0.0002	-0.02	0.2907	0.0004	0.05	OE
UDX2ZD		0.2257	-0.0002	-0.02	0.2917	0.0014	0.19	IC
UEUHCA		0.2326	0.0067	1.06	0.2994	0.0091	1.20	OE
UZA38P	*	0.2357	0.0098	1.55	0.2880	-0.0023	-0.30	OE
VKCAYU		0.2250	-0.0008	-0.13	0.2903	0.0001	0.01	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1604

1st Qtr 2026

**Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)**

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WFYZAW		0.2233	-0.0025	-0.39	0.2833	-0.0069	-0.91	XX
WKQ6UZ		0.2317	0.0058	0.92	0.2973	0.0071	0.93	GD
WPXT82		0.2317	0.0058	0.92	0.2927	0.0024	0.32	OE
WRR99Y		0.2363	0.0105	1.65	0.3073	0.0171	2.25	XX
X6RQW4		0.2110	-0.0148	-2.33	0.2693	-0.0209	-2.75	XX
XYA6G		0.2295	0.0037	0.58	0.2938	0.0035	0.47	OE
YQ3ZMZ		0.2200	-0.0058	-0.91	0.2933	0.0031	0.41	OE
YYMZFJ		0.2300	0.0042	0.66	0.2967	0.0064	0.84	OE
ZEVEBL		0.2187	-0.0072	-1.12	0.2863	-0.0039	-0.52	OE
ZLB7BK		0.2148	-0.0110	-1.73	0.2816	-0.0087	-1.14	XX

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.2258	Percent	0.2903	Percent
Stnd Dev Btwn Labs	0.0064	Percent	0.0076	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 99 of 104 reporting participants

Key to Method Codes Reported by Participants

- AE Spectrometry - Atomic Emission (AES)
- GD Spectrometry - Glow Discharge (GDS)
- IC Spectrometry - Inductively Coupled Plasma (ICP)
- XX Please Indicate Method Used for Current Element
- DR Spectrometry - Direct Reading OE (DROES)
- GR Gravimetry
- OE Spectrometry - Optical Emission (OES)

Comments on Assigned Data Flags for Test #1604

- 89MC2D (X) - Data for both samples are high.
- E7QFGB (X) - Data for both samples are high. Inconsistent within the determinations of sample L15.
- HUPZYC (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L15.



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1605

1st Qtr 2026

Carbon & Low Alloy Steel, MOLYBDENUM (Mo) MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.0157	-0.0004	-0.31	0.0180	0.0002	0.16	OE
2LP44V		0.0184	0.0023	1.63	0.0198	0.0021	1.36	OE
344NDK		0.0150	-0.0011	-0.79	0.0167	-0.0011	-0.71	OE
3FF3KD		0.0161	0.0000	0.02	0.0180	0.0002	0.14	OE
3FX63L		0.0131	-0.0030	-2.16	0.0152	-0.0026	-1.67	XX
3H4M43		0.0187	0.0026	1.85	0.0206	0.0029	1.88	OE
3QWWUK		0.0147	-0.0014	-0.98	0.0171	-0.0006	-0.41	IC
437VV7		0.0160	-0.0001	-0.07	0.0180	0.0002	0.16	OE
4DNCQX		0.0146	-0.0015	-1.06	0.0165	-0.0013	-0.82	OE
4RJNBV		0.0150	-0.0011	-0.79	0.0170	-0.0008	-0.50	OE
4UA3KR		0.0159	-0.0002	-0.15	0.0182	0.0004	0.27	OE
6PELUJ		0.0149	-0.0012	-0.84	0.0164	-0.0014	-0.89	OE
6UNL8A		0.0153	-0.0008	-0.55	0.0173	-0.0005	-0.30	OE
6ZYQ7P		0.0161	0.0000	0.00	0.0178	0.0000	0.03	OE
7V3LRB	X	0.0233	0.0072	5.21	0.0250	0.0072	4.74	XX
7YLGTH		0.0175	0.0014	1.03	0.0199	0.0021	1.40	OE
88QWPF		0.0163	0.0002	0.12	0.0181	0.0003	0.20	OE
89MC2D		0.0170	0.0009	0.65	0.0186	0.0008	0.55	GD
8GTE34		0.0162	0.0001	0.10	0.0179	0.0001	0.07	XX
8NJHHM		0.0154	-0.0007	-0.50	0.0173	-0.0005	-0.32	OE
8QLFTF	*	0.0128	-0.0033	-2.40	0.0148	-0.0030	-1.96	OE
8VEU4H	X	0.00757	-0.0085	-6.15	0.0104	-0.0074	-4.81	XX
8YT6GM		0.0160	-0.0001	-0.07	0.0175	-0.0003	-0.19	OE
93TTJF		0.0166	0.0005	0.36	0.0184	0.0006	0.42	OE
9MEQCQ	X	0.0353	0.0192	13.86	0.0483	0.0306	19.99	OE
9XVDND		0.0191	0.0030	2.16	0.0214	0.0037	2.40	OE
A8HR6N		0.0162	0.0001	0.07	0.0181	0.0003	0.22	OE
AJ9LEW		0.0153	-0.0008	-0.55	0.0170	-0.0008	-0.50	OE
B6CJNG		0.0184	0.0023	1.68	0.0212	0.0035	2.27	OE
BJRHTH		0.0166	0.0005	0.34	0.0182	0.0005	0.31	GD
BPEE9R		0.0160	-0.0001	-0.10	0.0178	0.0001	0.05	XX
BTJZ9B		0.0161	0.0000	0.00	0.0179	0.0001	0.09	OE
BUPRQQ		0.0140	-0.0021	-1.51	0.0150	-0.0028	-1.80	XX
C3KUT3		0.0150	-0.0011	-0.77	0.0165	-0.0013	-0.84	IC
CLPRQN		0.0170	0.0009	0.65	0.0180	0.0002	0.16	OE
CNK2A7		0.0150	-0.0011	-0.79	0.0168	-0.0010	-0.65	XX
CREYLQ	X	0.0100	-0.0061	-4.40	0.0120	-0.0058	-3.76	GD
D3EYKF		0.0171	0.0010	0.75	0.0188	0.0010	0.68	IC
D3RQEH		0.0133	-0.0028	-1.98	0.0148	-0.0030	-1.94	AE
D8TNB6		0.0150	-0.0011	-0.79	0.0153	-0.0024	-1.59	OE
DDB3QV		0.0153	-0.0008	-0.58	0.0168	-0.0010	-0.65	OE
DPN6A8		0.0167	0.0006	0.46	0.0181	0.0003	0.22	OE
DPP3K4		0.0160	-0.0001	-0.07	0.0176	-0.0002	-0.10	OE
DTQ4ML		0.0177	0.0016	1.15	0.0197	0.0019	1.25	OE
E7QFGB	X	0.00697	-0.0091	-6.58	0.0102	-0.0076	-4.96	OE
EAPQDB		0.0163	0.0002	0.17	0.0177	-0.0001	-0.06	OE
EMWFET		0.0165	0.0004	0.27	0.0181	0.0003	0.20	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1605

1st Qtr 2026

Carbon & Low Alloy Steel, MOLYBDENUM (Mo) MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EYE2VA		0.0180	0.0019	1.35	0.0198	0.0020	1.31	OE
F6V7W9		0.0166	0.0005	0.36	0.0187	0.0009	0.59	OE
F6V7YT		0.0150	-0.0011	-0.82	0.0168	-0.0010	-0.65	OE
F9UGUT		0.0156	-0.0005	-0.36	0.0168	-0.0010	-0.65	OE
FBWHT6		0.0141	-0.0020	-1.44	0.0155	-0.0023	-1.50	OE
FN6X4G	X	0.0107	-0.0054	-3.92	0.0135	-0.0042	-2.76	OE
G97LU4		0.0160	-0.0001	-0.07	0.0180	0.0002	0.16	OE
GCNMZJ		0.0159	-0.0002	-0.17	0.0175	-0.0003	-0.17	XX
GWZYY7		0.0150	-0.0011	-0.79	0.0160	-0.0018	-1.15	OE
HEQ6CJ		0.0165	0.0004	0.27	0.0180	0.0003	0.18	OE
HNGGWD		0.0160	-0.0001	-0.07	0.0179	0.0001	0.07	WD
HQKCFE		0.0152	-0.0009	-0.65	0.0166	-0.0011	-0.74	OE
HUPZYC	X	0.0157	-0.0004	-0.31	0.0197	0.0019	1.25	OE
J7Q6CG		0.0161	0.0000	0.02	0.0170	-0.0007	-0.48	GD
JFGQHF	X	0.0371	0.0210	15.11	0.0396	0.0218	14.28	GD
K46KHY		0.0150	-0.0011	-0.79	0.0170	-0.0008	-0.50	OE
K6XMYM		0.0161	0.0000	0.00	0.0178	0.0000	0.01	OE
KEKMCC		0.0158	-0.0003	-0.25	0.0176	-0.0002	-0.11	OE
KLLQRA		0.0171	0.0010	0.70	0.0190	0.0013	0.83	OE
LD8BAZ	X	0.1573	0.1412	101.80	0.0173	-0.0004	-0.28	OE
LL2F7M		0.0187	0.0026	1.90	0.0211	0.0034	2.21	OE
LR6C2F		0.0151	-0.0010	-0.74	0.0165	-0.0013	-0.82	OE
M4CR8C		0.0173	0.0012	0.89	0.0190	0.0012	0.81	OE
MFWPP3		0.0150	-0.0011	-0.79	0.0167	-0.0011	-0.71	OE
MH9VPG	X	0.0137	-0.0024	-1.75	0.0173	-0.0004	-0.28	XX
MK3JJX		0.0174	0.0013	0.94	0.0183	0.0005	0.35	IC
MNEPJC		0.0150	-0.0011	-0.77	0.0161	-0.0016	-1.06	OE
NJ8AXV		0.0170	0.0009	0.65	0.0185	0.0007	0.49	OE
NZTZV9		0.0163	0.0002	0.17	0.0173	-0.0004	-0.28	OE
PAX6L6		0.0137	-0.0024	-1.75	0.0153	-0.0024	-1.59	OE
PCJ9T3	X	0.0262	0.0101	7.30	0.0274	0.0097	6.33	OE
PHDW2U		0.0167	0.0006	0.46	0.0186	0.0008	0.53	OE
PVDPH6		0.0180	0.0019	1.37	0.0190	0.0012	0.81	GD
Q86VN9		0.0149	-0.0012	-0.84	0.0173	-0.0005	-0.30	OE
QEPN7Z		0.0165	0.0004	0.25	0.0182	0.0004	0.26	DR
RJC37Q		0.0137	-0.0024	-1.75	0.0150	-0.0028	-1.80	OE
RV9XQ2		0.0165	0.0004	0.29	0.0181	0.0003	0.20	OE
RYNPHU		0.0189	0.0028	2.04	0.0205	0.0027	1.79	OE
T2QW8Y		0.0143	-0.0018	-1.30	0.0156	-0.0022	-1.41	OE
T698BV		0.0153	-0.0008	-0.58	0.0171	-0.0007	-0.43	OE
TG3DGM		0.0153	-0.0008	-0.55	0.0173	-0.0004	-0.28	XX
TMUHCC	*	0.0197	0.0036	2.57	0.0220	0.0042	2.77	OE
UDX2ZD		0.0167	0.0006	0.46	0.0177	0.0000	-0.02	IC
UEUHCA		0.0166	0.0005	0.39	0.0181	0.0004	0.25	OE
UZA38P		0.0157	-0.0004	-0.31	0.0171	-0.0007	-0.45	OE
VKCAYU		0.0148	-0.0013	-0.91	0.0158	-0.0019	-1.26	OE
WFYZAW	X	0.0200	0.0039	2.81	0.0200	0.0022	1.47	XX



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1605

1st Qtr 2026

Carbon & Low Alloy Steel, MOLYBDENUM (Mo) MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WKQ6UZ	*	0.0147	-0.0014	-1.03	0.0177	-0.0001	-0.06	GD
WPXT82		0.0168	0.0007	0.48	0.0181	0.0004	0.25	OE
WRR99Y		0.0167	0.0006	0.41	0.0180	0.0002	0.16	XX
X6RQW4	X	0.0200	0.0039	2.81	0.0230	0.0052	3.43	XX
XTYA6G		0.0172	0.0011	0.79	0.0183	0.0005	0.33	OE
YQ3ZMZ		0.0157	-0.0004	-0.31	0.0180	0.0002	0.16	OE
YYMZFJ		0.0160	-0.0001	-0.07	0.0170	-0.0008	-0.50	OE
ZEVEBL		0.0185	0.0024	1.75	0.0200	0.0022	1.47	OE
ZLB7BK		0.0188	0.0027	1.95	0.0212	0.0034	2.25	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.0161	Percent	0.0178	Percent
Stnd Dev Btrwn Labs	0.0014	Percent	0.0015	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 89 of 103 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
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 #1605

- 7V3LRB (X) - Data for both samples are high. Possible Systematic Error.
- 8VEU4H (X) - Data for both samples are low. Possible Systematic Error.
- 9MEQCQ (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- CREYLQ (X) - Data for both samples are low. Possible Systematic Error.
- E7QFGB (X) - Data for both samples are low. Possible Systematic Error.
- FN6X4G (X) - Data for both samples are low. Possible Systematic Error.
- HUPZYC (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L15.
- JFGQHF (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- LD8BAZ (X) - Data for sample L15 appear to be off by a factor of ten.
- MH9VPG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- PCJ9T3 (X) - Data for both samples are high. Possible Systematic Error.
- WFYZAW (X) - Data for sample L15 are high.
- X6RQW4 (X) - Data for both samples are high. Possible Systematic Error.

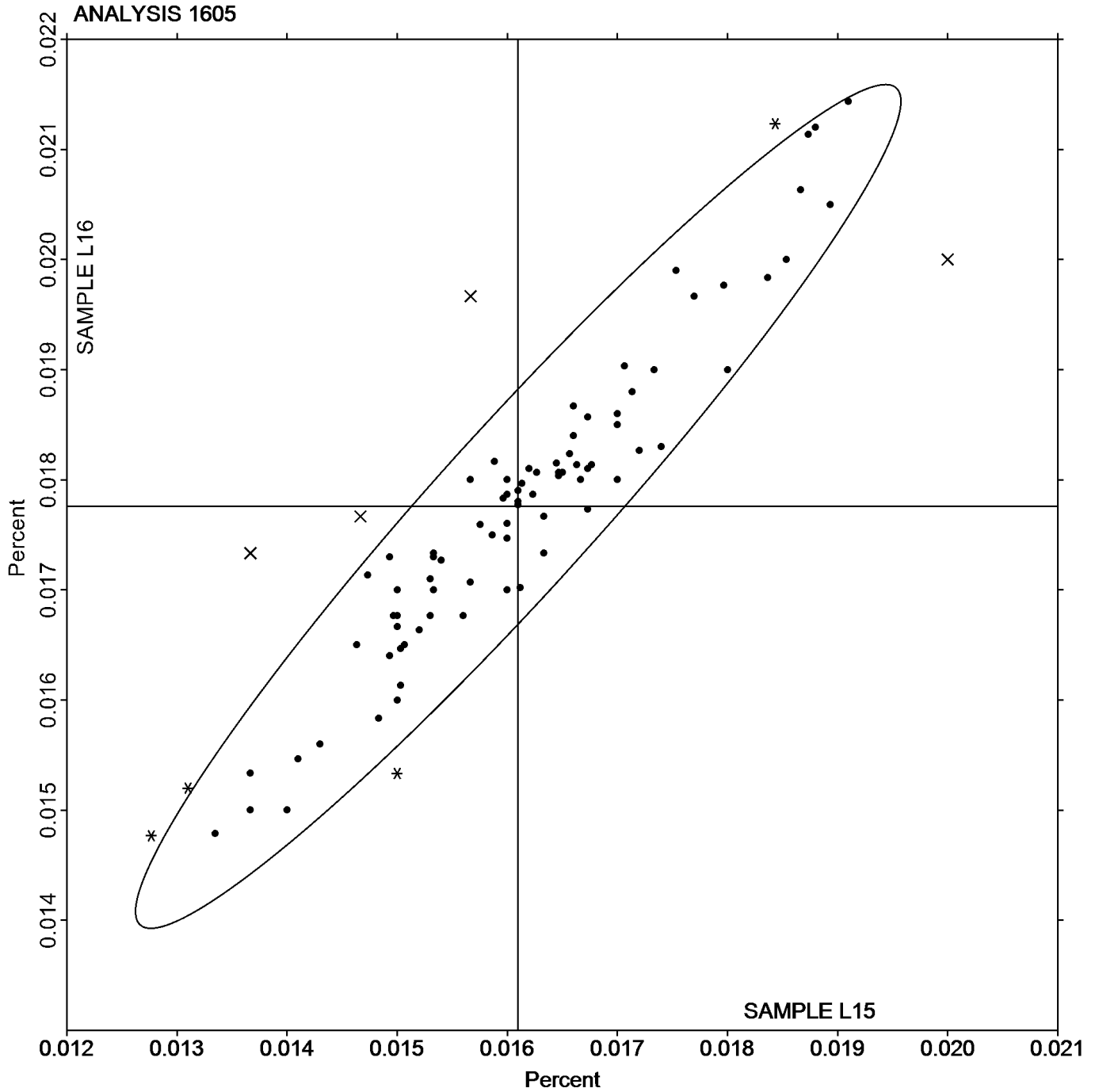


Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

SAMPLE L15
0.0161 Percent

SAMPLE L16
0.0178 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1606

1st Qtr 2026

Carbon & Low Alloy Steel, NICKEL (Ni) NICKEL (Ni)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.0340	-0.0016	-0.73	0.0583	-0.0046	-1.87	OE
2LP44V	X	0.0171	-0.0185	-8.48	0.0472	-0.0157	-6.41	OE
344NDK		0.0347	-0.0009	-0.42	0.0623	-0.0006	-0.24	OE
3FF3KD		0.0360	0.0004	0.19	0.0640	0.0011	0.44	OE
3FX63L		0.0342	-0.0013	-0.62	0.0603	-0.0026	-1.07	XX
3H4M43	X	0.0456	0.0100	4.58	0.0706	0.0077	3.13	IC
3QWWUK		0.0336	-0.0020	-0.91	0.0610	-0.0020	-0.80	IC
437VV7	*	0.0380	0.0024	1.11	0.0610	-0.0019	-0.78	OE
4DNCQX		0.0337	-0.0019	-0.88	0.0612	-0.0018	-0.72	OE
4RJNBV		0.0360	0.0004	0.19	0.0620	-0.0009	-0.38	OE
4UA3KR		0.0403	0.0047	2.15	0.0650	0.0020	0.83	OE
6PELUJ		0.0320	-0.0036	-1.64	0.0600	-0.0029	-1.19	OE
6UNL8A		0.0360	0.0004	0.18	0.0639	0.0009	0.38	OE
6ZYQ7P		0.0385	0.0030	1.35	0.0667	0.0038	1.54	OE
7V3LRB	X	0.0477	0.0121	5.54	0.0727	0.0097	3.97	XX
88QWPF		0.0365	0.0009	0.41	0.0646	0.0017	0.70	OE
89MC2D		0.0381	0.0025	1.15	0.0660	0.0031	1.25	GD
8GTE34		0.0364	0.0008	0.37	0.0639	0.0009	0.38	XX
8NJHHM		0.0338	-0.0018	-0.83	0.0593	-0.0036	-1.46	OE
8QLFTF		0.0323	-0.0032	-1.49	0.0623	-0.0006	-0.24	OE
8VEU4H		0.0346	-0.0010	-0.47	0.0623	-0.0007	-0.27	XX
8YT6GM		0.0360	0.0005	0.21	0.0642	0.0013	0.52	OE
93TTJF		0.0325	-0.0030	-1.40	0.0597	-0.0033	-1.33	OE
9MEQCQ		0.0317	-0.0039	-1.80	0.0577	-0.0053	-2.14	OE
9XVDND		0.0367	0.0011	0.50	0.0646	0.0017	0.68	OE
A8HR6N		0.0371	0.0016	0.71	0.0646	0.0017	0.70	OE
AJ9LEW		0.0367	0.0011	0.50	0.0647	0.0017	0.71	OE
B6CJNG	X	0.0369	0.0013	0.60	0.0705	0.0075	3.07	OE
BJRHTH		0.0323	-0.0033	-1.51	0.0591	-0.0038	-1.55	GD
BPEE9R		0.0369	0.0013	0.62	0.0624	-0.0005	-0.22	XX
BTJZ9B	X	0.0391	0.0035	1.61	0.0700	0.0071	2.88	OE
BUPRQQ		0.0337	-0.0019	-0.88	0.0603	-0.0026	-1.06	XX
C3KUT3		0.0343	-0.0013	-0.59	0.0609	-0.0020	-0.81	IC
CLPRQN		0.0357	0.0001	0.04	0.0630	0.0001	0.03	OE
CNK2A7		0.0331	-0.0025	-1.14	0.0611	-0.0018	-0.74	XX
CREYLQ		0.0330	-0.0026	-1.18	0.0570	-0.0059	-2.41	GD
D3EYKF		0.0321	-0.0035	-1.61	0.0592	-0.0038	-1.53	IC
D3RQEH	X	0.0384	0.0028	1.29	0.0709	0.0080	3.26	AE
D8TNB6		0.0350	-0.0006	-0.27	0.0627	-0.0003	-0.11	OE
DDB3QV		0.0365	0.0009	0.41	0.0640	0.0011	0.44	OE
DPN6A8		0.0361	0.0006	0.25	0.0634	0.0004	0.18	OE
DPP3K4		0.0362	0.0006	0.28	0.0634	0.0005	0.19	OE
DTQ4ML		0.0383	0.0028	1.26	0.0666	0.0036	1.48	OE
E7QFGB	X	0.0227	-0.0129	-5.92	0.0547	-0.0083	-3.36	OE
EAPQDB		0.0380	0.0025	1.12	0.0639	0.0010	0.41	OE
EMWFET		0.0369	0.0013	0.59	0.0640	0.0010	0.42	OE
EYE2VA		0.0340	-0.0015	-0.71	0.0602	-0.0028	-1.12	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1606

1st Qtr 2026

Carbon & Low Alloy Steel, NICKEL (Ni) NICKEL (Ni)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
F6V7W9		0.0337	-0.0019	-0.88	0.0619	-0.0010	-0.40	OE
F6V7YT		0.0366	0.0010	0.45	0.0653	0.0024	0.98	OE
F9UGUT		0.0363	0.0007	0.33	0.0630	0.0001	0.03	OE
FBWHT6		0.0366	0.0010	0.45	0.0641	0.0012	0.48	OE
FN6X4G	X	0.0209	-0.0147	-6.75	0.0547	-0.0082	-3.35	OE
G97LU4		0.0367	0.0011	0.50	0.0650	0.0021	0.84	OE
GCNMZJ		0.0383	0.0027	1.23	0.0670	0.0041	1.67	XX
GWZYY7		0.0340	-0.0016	-0.73	0.0600	-0.0029	-1.19	OE
HEQ6CJ		0.0364	0.0009	0.39	0.0640	0.0011	0.44	OE
HNGGWD		0.0360	0.0004	0.19	0.0627	-0.0003	-0.11	AE
HQKCFE		0.0369	0.0013	0.59	0.0643	0.0014	0.56	OE
HUPZYC		0.0340	-0.0016	-0.73	0.0613	-0.0016	-0.65	OE
J7Q6CG		0.0353	-0.0003	-0.14	0.0618	-0.0012	-0.48	GD
JFGQHF		0.0312	-0.0044	-2.02	0.0575	-0.0055	-2.22	GD
K46KHY		0.0377	0.0021	0.96	0.0643	0.0014	0.57	OE
K6XMYM	*	0.0347	-0.0009	-0.42	0.0577	-0.0053	-2.14	OE
KEKMCC		0.0394	0.0038	1.74	0.0666	0.0037	1.50	OE
KLLQRA		0.0320	-0.0035	-1.63	0.0598	-0.0031	-1.26	OE
LD8BAZ		0.0365	0.0009	0.41	0.0617	-0.0012	-0.50	OE
LL2F7M		0.0367	0.0011	0.50	0.0627	-0.0003	-0.11	OE
LR6C2F		0.0367	0.0011	0.51	0.0653	0.0023	0.95	OE
M4CR8C		0.0350	-0.0006	-0.27	0.0650	0.0021	0.84	OE
MFWPP3		0.0383	0.0028	1.26	0.0663	0.0034	1.39	OE
MH9VPG	*	0.0297	-0.0059	-2.71	0.0577	-0.0053	-2.14	XX
MK3JJX		0.0312	-0.0044	-2.01	0.0613	-0.0016	-0.65	IC
MNEPJC		0.0366	0.0011	0.48	0.0640	0.0011	0.44	OE
NJ8AXV		0.0362	0.0006	0.28	0.0638	0.0009	0.37	OE
NZTZV9		0.0370	0.0014	0.65	0.0650	0.0021	0.84	OE
PAX6L6	X	0.0633	0.0278	12.73	0.0370	-0.0259	-10.56	OE
PCJ9T3		0.0382	0.0027	1.22	0.0643	0.0014	0.57	OE
PHDW2U		0.0348	-0.0008	-0.36	0.0613	-0.0016	-0.66	OE
PVDPH6		0.0397	0.0041	1.87	0.0693	0.0064	2.61	GD
Q86VN9		0.0375	0.0019	0.86	0.0658	0.0028	1.16	OE
QEPN7Z		0.0370	0.0014	0.64	0.0640	0.0010	0.42	DR
RJC37Q		0.0343	-0.0012	-0.57	0.0610	-0.0019	-0.78	OE
RV9XQ2		0.0361	0.0006	0.25	0.0644	0.0014	0.59	OE
RYNPHU		0.0368	0.0013	0.57	0.0640	0.0011	0.44	OE
T2QW8Y		0.0356	0.0000	0.01	0.0632	0.0003	0.11	OE
T698BV		0.0382	0.0026	1.20	0.0644	0.0015	0.60	OE
TG3DGM		0.0360	0.0004	0.19	0.0633	0.0004	0.17	XX
TMUHCC		0.0370	0.0014	0.65	0.0657	0.0027	1.12	OE
UDX2ZD		0.0359	0.0003	0.13	0.0640	0.0011	0.44	IC
UEUHCA		0.0374	0.0019	0.85	0.0642	0.0012	0.51	OE
UZA38P		0.0382	0.0027	1.22	0.0665	0.0036	1.46	OE
VKCAJU		0.0364	0.0008	0.37	0.0638	0.0009	0.36	OE
WFYZAW		0.0333	-0.0022	-1.03	0.0600	-0.0029	-1.19	XX
WKQ6UZ	X	0.0273	-0.0082	-3.78	0.0557	-0.0073	-2.96	GD



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1606

1st Qtr 2026

Carbon & Low Alloy Steel, NICKEL (Ni) NICKEL (Ni)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WPXT82		0.0326	-0.0029	-1.35	0.0623	-0.0006	-0.26	OE
WRR99Y		0.0387	0.0031	1.41	0.0667	0.0037	1.52	XX
X6RQW4		0.0350	-0.0006	-0.27	0.0607	-0.0023	-0.92	XX
XTYA6G		0.0358	0.0002	0.08	0.0630	0.0001	0.03	OE
YQ3ZMZ		0.0337	-0.0019	-0.88	0.0617	-0.0013	-0.51	OE
YYMZFJ		0.0380	0.0024	1.11	0.0660	0.0031	1.25	OE
ZEVEBL		0.0310	-0.0046	-2.10	0.0603	-0.0026	-1.06	OE
ZLB7BK		0.0371	0.0015	0.70	0.0626	-0.0004	-0.15	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.0356	Percent	0.0629	Percent
Std Dev Bwn Labs	0.0022	Percent	0.0025	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 90 of 102 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	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 #1606

- 2LP44V (X) - Data for both samples are low. Possible Systematic Error.
- 3H4M43 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L16.
- 7V3LRB (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L15.
- B6CJNG (X) - Data for sample L16 are high.
- BTJZ9B (X) - Data for sample L16 are high.
- D3RQEH (X) - Data for sample L16 are high. Inconsistent within the determinations of sample L15.
- E7QFGB (X) - Data for both samples are low. Possible Systematic Error.
- FN6X4G (X) - Data for both samples are low. Possible Systematic Error.
- PAX6L6 (X) - Data appear to be transposed between samples.
- WKQ6UZ (X) - Data for both samples are low. Possible Systematic Error.



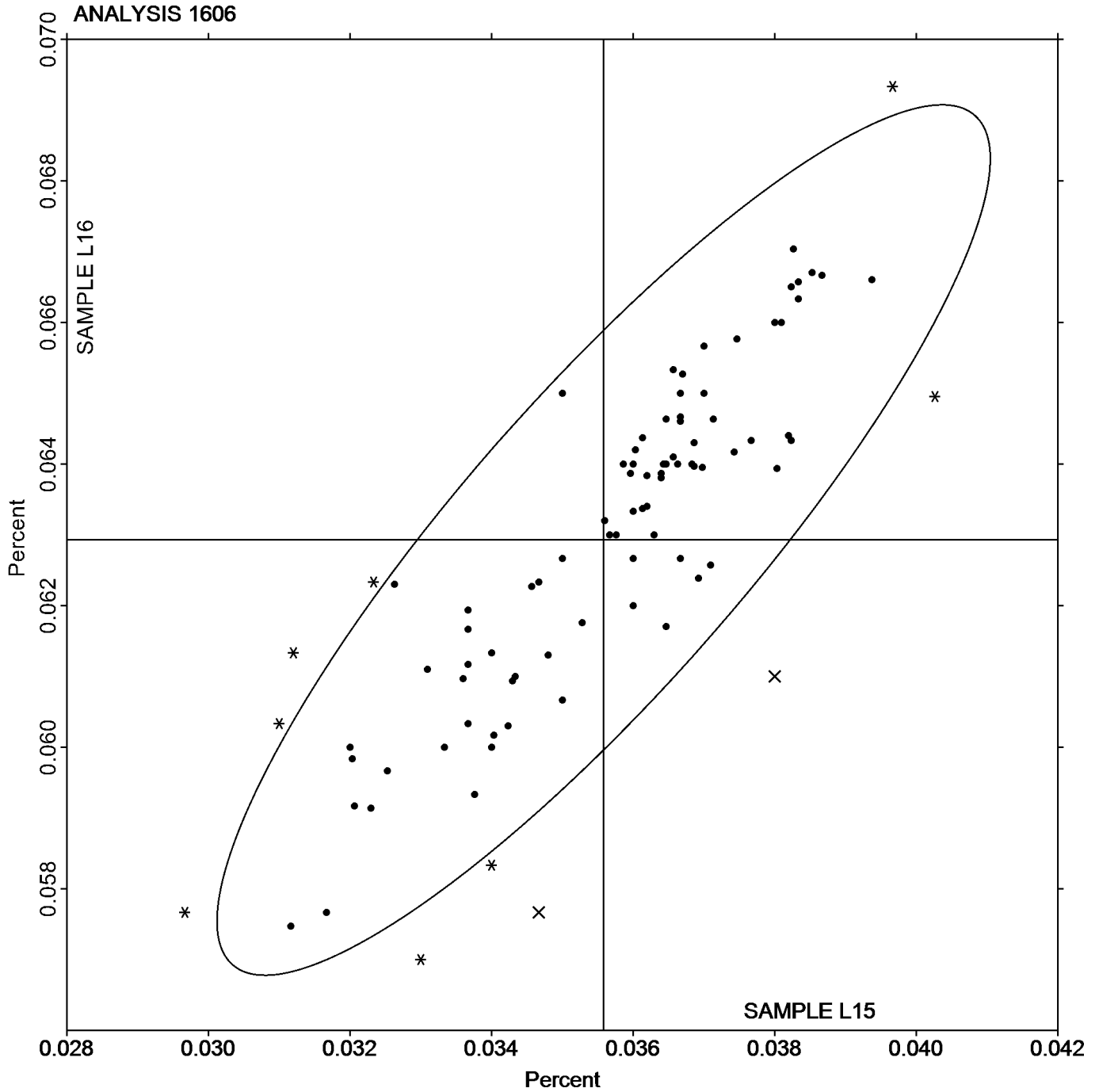
Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)

NICKEL (Ni)

SAMPLE L15
0.0356 Percent

SAMPLE L16
0.0629 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1607

1st Qtr 2026

Carbon & Low Alloy Steel, CHROMIUM (Cr) CHROMIUM (Cr)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.0847	-0.0067	-2.31	0.0980	-0.0068	-2.16	OE
2LP44V		0.0973	0.0059	2.03	0.1113	0.0066	2.10	OE
344NDK		0.0930	0.0016	0.55	0.1107	0.0059	1.89	OE
3FF3KD		0.0927	0.0013	0.43	0.1060	0.0012	0.40	OE
3FX63L		0.0945	0.0031	1.07	0.1070	0.0022	0.72	XX
3H4M43		0.0849	-0.0065	-2.22	0.1005	-0.0043	-1.36	IC
3QWWUK		0.0914	0.0000	0.00	0.1050	0.0002	0.08	IC
437VV7		0.0930	0.0016	0.55	0.1060	0.0012	0.40	OE
4DNCQX		0.0906	-0.0008	-0.29	0.1020	-0.0028	-0.88	XX
4RJNBV		0.0900	-0.0014	-0.48	0.1030	-0.0018	-0.56	OE
4UA3KR		0.0906	-0.0008	-0.28	0.1031	-0.0016	-0.51	OE
6PELUJ	*	0.0893	-0.0021	-0.71	0.1090	0.0042	1.35	OE
6UNL8A		0.0986	0.0072	2.48	0.1128	0.0080	2.56	OE
6ZYQ7P		0.0903	-0.0011	-0.38	0.1035	-0.0013	-0.41	OE
7V3LRB	X	0.1053	0.0139	4.78	0.1100	0.0052	1.67	XX
7YLGTH		0.0851	-0.0063	-2.15	0.0976	-0.0072	-2.29	OE
88QWPF		0.0916	0.0002	0.06	0.1044	-0.0004	-0.11	OE
89MC2D		0.0886	-0.0028	-0.96	0.1011	-0.0037	-1.17	GD
8GTE34		0.0917	0.0003	0.11	0.1046	-0.0002	-0.05	XX
8NJHHM		0.0920	0.0006	0.22	0.1056	0.0009	0.28	OE
8QLFTF		0.0907	-0.0007	-0.25	0.1050	0.0002	0.08	OE
8VEU4H		0.0890	-0.0024	-0.83	0.1023	-0.0024	-0.77	XX
8YT6GM		0.0920	0.0006	0.22	0.1057	0.0009	0.29	OE
93TTJF		0.0927	0.0013	0.43	0.1060	0.0012	0.40	OE
9MEQCQ		0.0903	-0.0011	-0.37	0.1030	-0.0018	-0.56	OE
9XVDND		0.0910	-0.0004	-0.14	0.1039	-0.0009	-0.28	OE
A8HR6N		0.0923	0.0009	0.32	0.1043	-0.0004	-0.14	OE
AJ9LEW		0.0907	-0.0007	-0.25	0.1037	-0.0011	-0.35	OE
B6CJNG		0.0910	-0.0004	-0.13	0.1027	-0.0021	-0.67	OE
BJRHTH		0.0951	0.0037	1.26	0.1080	0.0032	1.03	GD
BPEE9R		0.0920	0.0006	0.21	0.1039	-0.0009	-0.27	XX
BTJZ9B		0.0920	0.0006	0.21	0.1040	-0.0008	-0.24	OE
BUPRQQ	*	0.0860	-0.0054	-1.85	0.1057	0.0009	0.29	XX
C3KUT3		0.0913	-0.0001	-0.03	0.1042	-0.0005	-0.17	IC
CLPRQN		0.0940	0.0026	0.89	0.1070	0.0022	0.72	OE
CNK2A7		0.0969	0.0055	1.87	0.1120	0.0072	2.31	XX
CREYLQ		0.0920	0.0006	0.21	0.1050	0.0002	0.08	GD
D3EYKF		0.0904	-0.0010	-0.35	0.1040	-0.0008	-0.24	IC
D3RQEH	X	0.1025	0.0110	3.79	0.1169	0.0122	3.88	AE
D8TNB6	X	0.0937	0.0023	0.78	0.0627	-0.0421	-13.43	OE
DDB3QV		0.0927	0.0013	0.43	0.1057	0.0009	0.29	OE
DPN6A8		0.0916	0.0002	0.08	0.1038	-0.0010	-0.31	OE
DPP3K4		0.0920	0.0006	0.21	0.1050	0.0002	0.08	OE
DTQ4ML		0.0954	0.0040	1.38	0.1088	0.0040	1.28	OE
E7QFGB	*	0.0823	-0.0091	-3.11	0.0963	-0.0084	-2.69	OE
EAPQDB		0.0945	0.0031	1.05	0.1078	0.0030	0.97	OE
EMWFET		0.0920	0.0006	0.21	0.1060	0.0012	0.40	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1607

1st Qtr 2026

Carbon & Low Alloy Steel, CHROMIUM (Cr) CHROMIUM (Cr)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EYE2VA	*	0.0852	-0.0062	-2.14	0.1070	0.0022	0.72	OE
F6V7W9		0.0934	0.0020	0.67	0.1073	0.0025	0.81	OE
F6V7YT		0.0917	0.0003	0.09	0.1050	0.0002	0.08	OE
F9UGUT		0.0927	0.0013	0.43	0.1060	0.0012	0.40	OE
FBWHT6		0.0925	0.0011	0.38	0.1060	0.0012	0.39	OE
FN6X4G	X	0.0750	-0.0164	-5.62	0.0906	-0.0141	-4.51	OE
G97LU4		0.0907	-0.0007	-0.25	0.1033	-0.0014	-0.45	OE
GCNMZJ		0.0916	0.0002	0.08	0.1036	-0.0012	-0.38	XX
GWZYY7		0.0850	-0.0064	-2.19	0.0980	-0.0068	-2.16	OE
HEQ6CJ		0.0910	-0.0004	-0.14	0.1040	-0.0008	-0.24	OE
HNGGWD		0.0920	0.0006	0.21	0.1030	-0.0018	-0.56	AE
HQKCFE		0.0945	0.0031	1.06	0.1076	0.0029	0.92	OE
HUPZYC		0.0933	0.0019	0.66	0.1070	0.0022	0.72	OE
J7Q6CG		0.0921	0.0006	0.22	0.1056	0.0008	0.27	GD
JFGQHF		0.0934	0.0020	0.70	0.1063	0.0016	0.50	GD
K46KHY		0.0877	-0.0037	-1.28	0.0997	-0.0051	-1.62	OE
K6XMYM	X	0.0934	0.0020	0.69	0.1132	0.0084	2.69	XX
KEKMCC		0.0910	-0.0004	-0.13	0.1039	-0.0008	-0.26	OE
KLLQRA		0.0905	-0.0009	-0.31	0.1040	-0.0007	-0.23	OE
LD8BAZ		0.0869	-0.0045	-1.53	0.1050	0.0002	0.08	OE
LL2F7M		0.0910	-0.0004	-0.14	0.1043	-0.0004	-0.14	OE
LR6C2F		0.0863	-0.0051	-1.76	0.0984	-0.0063	-2.02	OE
M4CR8C		0.0897	-0.0017	-0.59	0.1050	0.0002	0.08	OE
MFWPP3		0.0903	-0.0011	-0.37	0.1033	-0.0014	-0.45	OE
MH9VPG	X	0.0753	-0.0161	-5.51	0.0907	-0.0141	-4.49	XX
MK3JJX		0.0907	-0.0007	-0.25	0.1030	-0.0018	-0.56	IC
MNEPJC		0.0897	-0.0017	-0.58	0.1029	-0.0019	-0.59	OE
NJ8AXV		0.0928	0.0014	0.47	0.1061	0.0014	0.44	OE
NZTZV9		0.0940	0.0026	0.89	0.1057	0.0009	0.29	OE
PAX6L6		0.0893	-0.0021	-0.71	0.1027	-0.0021	-0.67	OE
PCJ9T3	*	0.0860	-0.0054	-1.85	0.0950	-0.0098	-3.11	OE
PHDW2U		0.0883	-0.0031	-1.07	0.1016	-0.0032	-1.02	OE
PVDPH6		0.0960	0.0046	1.58	0.1100	0.0052	1.67	GD
Q86VN9		0.0955	0.0041	1.41	0.1075	0.0027	0.88	OE
QEPN7Z		0.0923	0.0009	0.32	0.1056	0.0008	0.27	DR
RJC37Q		0.0903	-0.0011	-0.37	0.1040	-0.0008	-0.24	OE
RV9XQ2		0.0937	0.0023	0.78	0.1059	0.0011	0.36	OE
RYNPHU		0.0942	0.0028	0.95	0.1050	0.0002	0.08	OE
T2QW8Y		0.0933	0.0019	0.65	0.1073	0.0025	0.81	OE
T698BV		0.0937	0.0023	0.79	0.1060	0.0012	0.40	OE
TG3DGM	X	0.0887	-0.0027	-0.94	0.0633	-0.0414	-13.21	XX
TMUHCC		0.0893	-0.0021	-0.71	0.1030	-0.0018	-0.56	OE
UDX2ZD		0.0927	0.0013	0.43	0.1050	0.0002	0.08	IC
UEUHCA		0.0947	0.0033	1.14	0.1080	0.0033	1.05	OE
UZA38P		0.0906	-0.0008	-0.26	0.1044	-0.0004	-0.11	OE
VKCAJU		0.0920	0.0006	0.21	0.1050	0.0002	0.08	OE
WFYZAW	*	0.0900	-0.0014	-0.48	0.1100	0.0052	1.67	XX



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1607

1st Qtr 2026

Carbon & Low Alloy Steel, CHROMIUM (Cr) CHROMIUM (Cr)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WKQ6UZ		0.0847	-0.0067	-2.31	0.0983	-0.0064	-2.05	GD
WPXT82		0.0922	0.0008	0.27	0.1057	0.0009	0.29	OE
WRR99Y	X	0.0793	-0.0121	-4.14	0.0900	-0.0148	-4.71	XX
X6RQW4		0.0877	-0.0037	-1.28	0.1020	-0.0028	-0.88	XX
XTYA6G	X	0.1012	0.0098	3.35	0.1137	0.0089	2.84	OE
YQ3ZMZ	*	0.0933	0.0019	0.66	0.1000	-0.0048	-1.52	OE
YYMZFJ		0.0900	-0.0014	-0.48	0.1020	-0.0028	-0.88	OE
ZEVEBL		0.0930	0.0016	0.55	0.1063	0.0016	0.50	OE
ZLB7BK		0.0915	0.0001	0.03	0.1057	0.0009	0.30	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.0914	Percent	0.1048	Percent
Stnd Dev Btwn Labs	0.0029	Percent	0.0031	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 89 of 103 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	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 #1607

- 7V3LRB (X) - Data for sample L15 are high. Inconsistent within the determinations of sample L15.
- D3RQEH (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- D8TNB6 (X) - Data for sample L16 are low.
- FN6X4G (X) - Data for both samples are low. Possible Systematic Error.
- K6XMYM (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- MH9VPG (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample L16.
- TG3DGM (X) - Data for sample L16 are low.
- WRR99Y (X) - Data for both samples are low. Possible Systematic Error.
- XTYA6G (X) - Data for both samples are high. Possible Systematic Error.

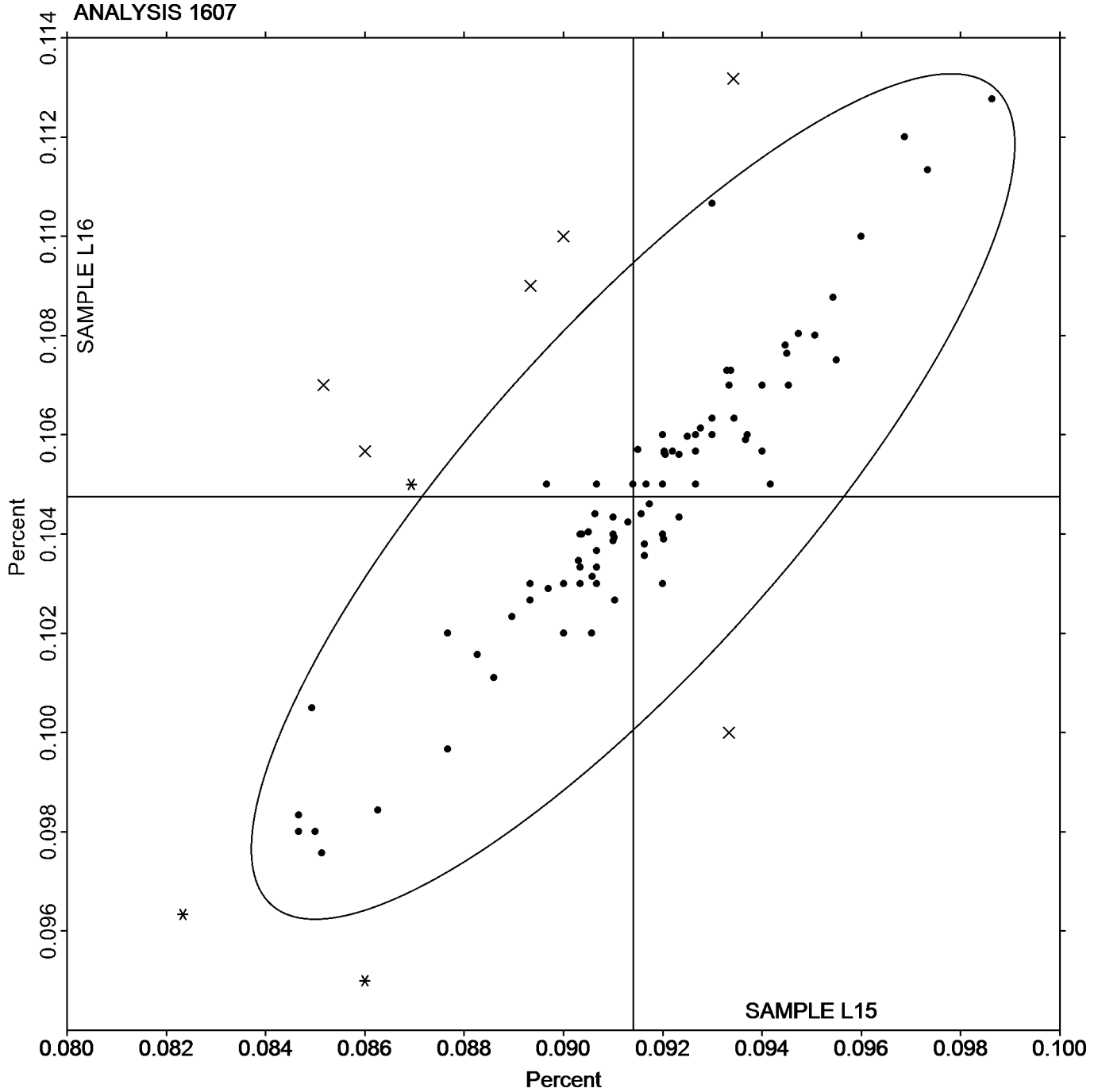


Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

SAMPLE L15
0.0914 Percent

SAMPLE L16
0.1048 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1608

1st Qtr 2026

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.1047	-0.0008	-0.25	0.1773	-0.0017	-0.41	OE
2LP44V		0.1013	-0.0042	-1.25	0.1780	-0.0010	-0.24	OE
344NDK		0.1070	0.0015	0.45	0.1763	-0.0027	-0.65	OE
3FF3KD		0.1037	-0.0018	-0.55	0.1767	-0.0023	-0.57	OE
3FX63L		0.1073	0.0018	0.55	0.1810	0.0020	0.49	XX
3H4M43		0.1033	-0.0022	-0.65	0.1767	-0.0023	-0.57	OE
3QWWUK		0.1017	-0.0038	-1.15	0.1750	-0.0040	-0.98	IC
437VV7		0.1017	-0.0038	-1.15	0.1737	-0.0053	-1.31	OE
4DNCQX		0.1000	-0.0055	-1.65	0.1717	-0.0073	-1.80	OE
4RJNBV		0.1050	-0.0005	-0.15	0.1773	-0.0017	-0.41	OE
4UA3KR		0.1075	0.0020	0.61	0.1839	0.0049	1.20	OE
6PELUJ		0.1030	-0.0025	-0.75	0.1710	-0.0080	-1.96	OE
6UNL8A		0.1029	-0.0026	-0.77	0.1789	-0.0001	-0.01	OE
6ZYQ7P		0.1081	0.0026	0.78	0.1835	0.0045	1.10	OE
7V3LRB	X	0.1300	0.0245	7.36	0.1900	0.0110	2.71	XX
7YLGTH		0.1133	0.0078	2.34	0.1842	0.0052	1.28	OE
88QWPF		0.1042	-0.0013	-0.38	0.1816	0.0026	0.63	OE
89MC2D		0.1132	0.0077	2.31	0.1862	0.0072	1.77	GD
8GTE34	*	0.0996	-0.0059	-1.76	0.1822	0.0032	0.80	XX
8NJHHM		0.1011	-0.0044	-1.31	0.1737	-0.0053	-1.29	OE
8QLFTF	X	0.0907	-0.0148	-4.46	0.1803	0.0013	0.33	OE
8VEU4H		0.1047	-0.0008	-0.25	0.1853	0.0063	1.56	XX
8YT6GM		0.1047	-0.0008	-0.25	0.1780	-0.0010	-0.24	OE
93TTJF		0.1047	-0.0008	-0.25	0.1727	-0.0063	-1.55	OE
9MEQCQ		0.1013	-0.0042	-1.25	0.1720	-0.0070	-1.72	OE
9XVDND		0.1076	0.0021	0.63	0.1823	0.0033	0.81	OE
A8HR6N		0.1073	0.0018	0.55	0.1793	0.0003	0.08	OE
AJ9LEW		0.1103	0.0048	1.45	0.1820	0.0030	0.74	OE
B6CJNG	X	0.1200	0.0145	4.36	0.1787	-0.0003	-0.08	OE
BJRHTH		0.1067	0.0012	0.35	0.1837	0.0047	1.15	GD
BPEE9R		0.1052	-0.0003	-0.08	0.1767	-0.0023	-0.56	XX
BTJZ9B		0.1070	0.0015	0.45	0.1820	0.0030	0.74	OE
BUPRQQ		0.1017	-0.0038	-1.15	0.1740	-0.0050	-1.23	XX
C3KUT3		0.1035	-0.0020	-0.61	0.1761	-0.0029	-0.71	IC
CLPRQN		0.1047	-0.0008	-0.25	0.1753	-0.0037	-0.90	OE
CNK2A7		0.1027	-0.0028	-0.85	0.1787	-0.0003	-0.08	XX
CREYLQ		0.1050	-0.0005	-0.15	0.1800	0.0010	0.25	GD
D3EYKF		0.1040	-0.0015	-0.45	0.1757	-0.0033	-0.82	IC
D3RQEH		0.1112	0.0057	1.70	0.1847	0.0057	1.41	AE
D8TNB6		0.1037	-0.0018	-0.55	0.1807	0.0017	0.41	OE
DDB3QV		0.1050	-0.0005	-0.15	0.1807	0.0017	0.41	OE
DPN6A8		0.1072	0.0017	0.50	0.1823	0.0033	0.81	OE
DPP3K4		0.1050	-0.0005	-0.15	0.1790	0.0000	0.00	OE
DTQ4ML		0.1099	0.0044	1.33	0.1779	-0.0011	-0.26	OE
E7QFGB		0.1097	0.0042	1.25	0.1843	0.0053	1.31	OE
EAPQDB		0.1064	0.0009	0.27	0.1742	-0.0048	-1.18	OE
EMWFET	X	0.0940	-0.0115	-3.46	0.1760	-0.0030	-0.73	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1608

1st Qtr 2026

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EYE2VA		0.1040	-0.0015	-0.45	0.1753	-0.0037	-0.90	OE
F6V7W9	*	0.1155	0.0100	3.01	0.1893	0.0103	2.54	WD
F6V7YT		0.1073	0.0018	0.55	0.1830	0.0040	0.99	OE
F9UGUT		0.1030	-0.0025	-0.75	0.1780	-0.0010	-0.24	OE
FBWHT6		0.1020	-0.0035	-1.06	0.1820	0.0030	0.73	OE
FN6X4G		0.1037	-0.0018	-0.55	0.1723	-0.0067	-1.64	OE
GCNMZJ		0.1100	0.0045	1.35	0.1825	0.0035	0.85	XX
GWZYY7		0.1040	-0.0015	-0.45	0.1720	-0.0070	-1.72	OE
HEQ6CJ		0.1057	0.0002	0.05	0.1810	0.0020	0.49	OE
HNGGWD		0.1047	-0.0008	-0.25	0.1800	0.0010	0.25	AE
HQKCFE		0.1039	-0.0016	-0.48	0.1759	-0.0031	-0.75	OE
HUPZYC		0.1050	-0.0005	-0.15	0.1753	-0.0037	-0.90	OE
J7Q6CG		0.1083	0.0028	0.83	0.1832	0.0042	1.04	GD
JFGQHF		0.1043	-0.0012	-0.35	0.1753	-0.0037	-0.90	GD
K46KHY		0.1030	-0.0025	-0.75	0.1770	-0.0020	-0.49	OE
K6XMYM		0.1044	-0.0011	-0.33	0.1824	0.0034	0.84	XX
KEKMCC		0.1006	-0.0049	-1.48	0.1778	-0.0012	-0.29	OE
KLLQRA		0.1030	-0.0025	-0.76	0.1737	-0.0053	-1.29	OE
LD8BAZ		0.1050	-0.0005	-0.15	0.1780	-0.0010	-0.24	OE
LL2F7M		0.1073	0.0018	0.55	0.1813	0.0023	0.58	OE
LR6C2F		0.1097	0.0042	1.25	0.1860	0.0070	1.72	OE
M4CR8C		0.1087	0.0032	0.95	0.1787	-0.0003	-0.08	OE
MFWPP3		0.1070	0.0015	0.45	0.1813	0.0023	0.58	OE
MH9VPG		0.1007	-0.0048	-1.45	0.1737	-0.0053	-1.31	XX
MK3JJX		0.1020	-0.0035	-1.05	0.1813	0.0023	0.58	IC
MNEPJC		0.1103	0.0048	1.45	0.1820	0.0030	0.74	OE
NJ8AXV		0.1065	0.0010	0.30	0.1800	0.0010	0.25	OE
NZTZV9		0.1090	0.0035	1.05	0.1813	0.0023	0.58	OE
PAX6L6		0.1020	-0.0035	-1.05	0.1737	-0.0053	-1.31	OE
PCJ9T3	X	0.0957	-0.0098	-2.96	0.1833	0.0043	1.07	OE
PHDW2U		0.1068	0.0013	0.40	0.1848	0.0058	1.43	OE
PVDPH6		0.1100	0.0045	1.35	0.1800	0.0010	0.25	GD
Q86VN9		0.1094	0.0039	1.17	0.1890	0.0100	2.46	OE
QEPN7Z		0.0997	-0.0058	-1.74	0.1758	-0.0032	-0.80	DR
RJC37Q		0.0993	-0.0062	-1.85	0.1763	-0.0027	-0.65	OE
RV9XQ2	*	0.1008	-0.0047	-1.40	0.1845	0.0055	1.36	OE
RYNPHU		0.1037	-0.0018	-0.55	0.1760	-0.0030	-0.73	OE
T2QW8Y		0.1100	0.0045	1.35	0.1808	0.0018	0.45	OE
T698BV		0.1020	-0.0035	-1.05	0.1800	0.0010	0.25	OE
TG3DGM		0.1017	-0.0038	-1.15	0.1783	-0.0007	-0.16	XX
TMUHCC		0.1083	0.0028	0.85	0.1823	0.0033	0.82	OE
UDX2ZD		0.1057	0.0002	0.05	0.1773	-0.0017	-0.41	IC
UEUHCA		0.1082	0.0027	0.80	0.1761	-0.0029	-0.72	OE
UZA38P		0.1049	-0.0006	-0.17	0.1785	-0.0005	-0.13	OE
VKCAJU		0.1053	-0.0002	-0.05	0.1803	0.0013	0.33	OE
WFYZAW		0.1000	-0.0055	-1.65	0.1700	-0.0090	-2.21	XX
WKQ6UZ		0.1063	0.0008	0.25	0.1813	0.0023	0.58	GD



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1608

1st Qtr 2026

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WPXT82		0.1057	0.0002	0.05	0.1783	-0.0007	-0.16	OE
WRR99Y		0.1093	0.0038	1.15	0.1847	0.0057	1.40	XX
X6RQW4		0.1053	-0.0002	-0.05	0.1790	0.0000	0.00	XX
XTYA6G		0.1071	0.0016	0.48	0.1835	0.0045	1.12	OE
YQ3ZMZ		0.1100	0.0045	1.35	0.1800	0.0010	0.25	OE
YYMZFJ		0.1100	0.0045	1.35	0.1800	0.0010	0.25	OE
ZEVEBL		0.1000	-0.0055	-1.65	0.1747	-0.0043	-1.06	OE
ZLB7BK	X	0.0945	-0.0110	-3.31	0.1463	-0.0327	-8.03	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.1055	Percent	0.1790	Percent
Std Dev Bwn Labs	0.0033	Percent	0.0041	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 94 of 102 reporting participants

Key to Method Codes Reported by Participants

- | | | | |
|----|---|----|--|
| AE | Spectrometry - Atomic Emission (AES) | DR | Spectrometry - Direct Reading OE (DROES) |
| 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 #1608

- 7V3LRB (X) - Data for sample L15 are high. Inconsistent within the determinations of sample L16.
- 8QLFTF (X) - Data for sample L15 are low.
- B6CJNG (X) - Data for sample L15 are high.
- EMWFET (X) - Data for sample L15 are low.
- PCJ9T3 (X) - Data for sample L15 are low.
- ZLB7BK (X) - Data for both samples are low.



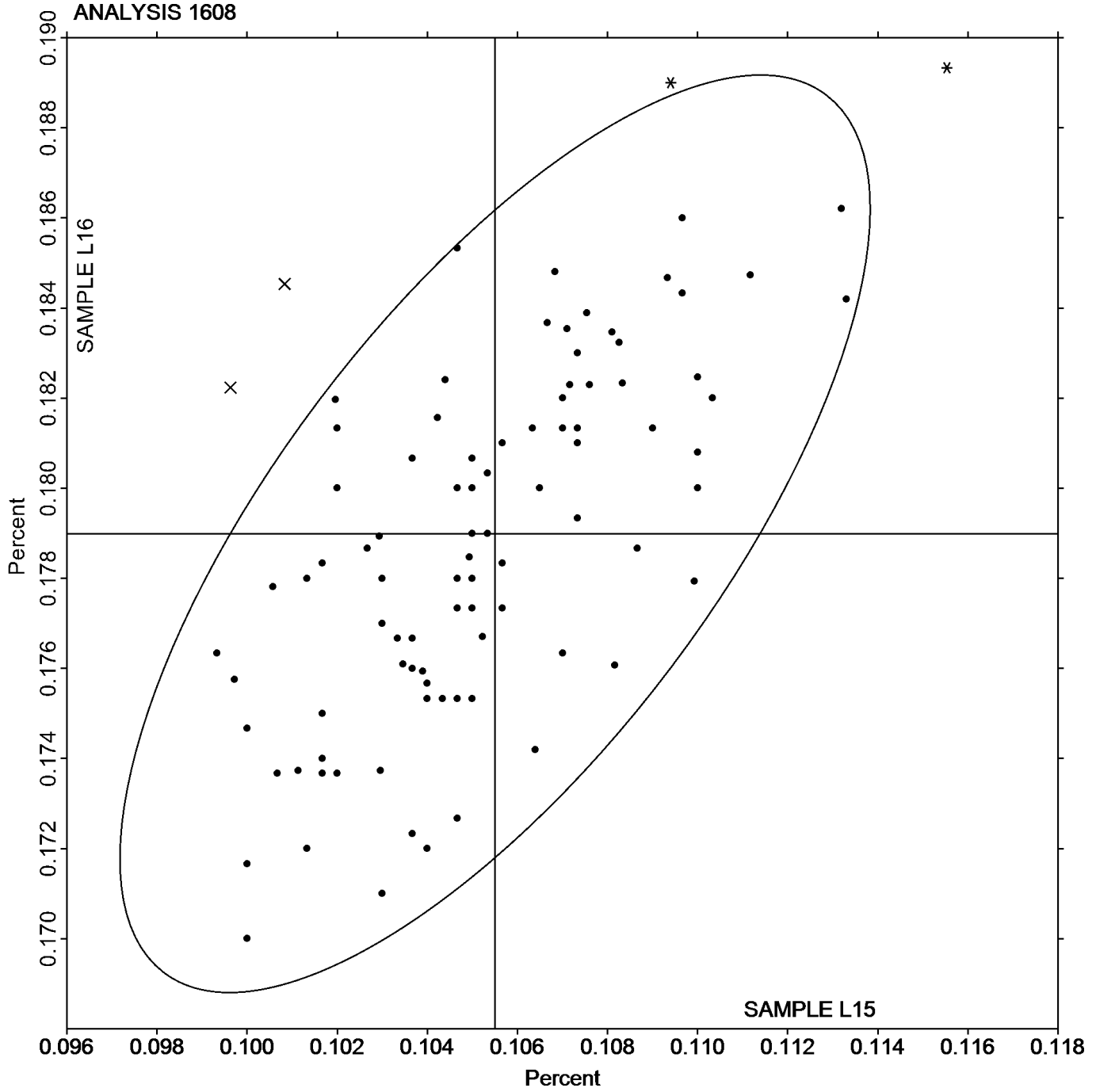
Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)

COPPER (Cu)

SAMPLE L15
0.1055 Percent

SAMPLE L16
0.1790 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1610

1st Qtr 2026

Carbon & Low Alloy Steel, TIN (Sn)
TIN (Sn)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2CZ4PJ		0.00740	0.00139	2.58	0.00980	0.00132	2.01	OE
3FF3KD		0.00607	0.00005	0.10	0.00843	-0.00005	-0.08	OE
437VV7		0.00633	0.00032	0.60	0.00900	0.00052	0.79	WD
4DNCQX		0.00530	-0.00071	-1.32	0.00770	-0.00078	-1.20	OE
4RJNBV		0.00600	-0.00001	-0.02	0.00900	0.00052	0.79	OE
4UA3KR	*	0.00432	-0.00169	-3.15	0.00670	-0.00179	-2.73	OE
6UNL8A		0.00553	-0.00048	-0.89	0.00807	-0.00042	-0.64	OE
6ZYQ7P		0.00623	0.00022	0.41	0.00887	0.00038	0.59	OE
7V3LRB		0.00700	0.00099	1.84	0.00933	0.00085	1.30	XX
8GTE34		0.00587	-0.00015	-0.27	0.00873	0.00025	0.38	XX
8NJHHM		0.00646	0.00045	0.84	0.00896	0.00047	0.72	OE
8QLFTF		0.00697	0.00095	1.78	0.00980	0.00132	2.01	OE
8VEU4H	*	0.00737	0.00135	2.52	0.00920	0.00072	1.09	XX
8YT6GM		0.00607	0.00005	0.10	0.00850	0.00002	0.02	OE
93TTJF		0.00553	-0.00048	-0.89	0.00770	-0.00078	-1.20	OE
9XVDND		0.00613	0.00012	0.23	0.00847	-0.00002	-0.03	OE
A8HR6N		0.00680	0.00079	1.47	0.00903	0.00055	0.84	OE
AJ9LEW		0.00600	-0.00001	-0.02	0.00800	-0.00048	-0.74	OE
BPEE9R		0.00573	-0.00028	-0.52	0.00851	0.00003	0.04	XX
BTJZ9B		0.00520	-0.00081	-1.51	0.00790	-0.00058	-0.89	OE
CLPRQN		0.00607	0.00005	0.10	0.00820	-0.00028	-0.43	OE
D3EYKF		0.00563	-0.00038	-0.70	0.00820	-0.00028	-0.43	IC
D3RQEH	X	0.0123	0.00625	11.63	0.0148	0.00628	9.60	AE
D8TNB6		0.00700	0.00099	1.84	0.0100	0.00152	2.32	OE
DDB3QV		0.00577	-0.00025	-0.46	0.00817	-0.00032	-0.48	OE
DPN6A8		0.00597	-0.00005	-0.08	0.00827	-0.00022	-0.33	OE
DPP3K4		0.00600	-0.00001	-0.02	0.00860	0.00012	0.18	OE
DTQ4ML		0.00680	0.00079	1.47	0.00963	0.00115	1.76	OE
E7QFGB	X	0.0127	0.00665	12.37	0.0163	0.00785	12.00	OE
EAPQDB		0.00513	-0.00088	-1.63	0.00720	-0.00128	-1.96	OE
EMWFET		0.00610	0.00009	0.16	0.00807	-0.00042	-0.64	OE
EYE2VA		0.00503	-0.00098	-1.82	0.00707	-0.00142	-2.17	OE
F6V7W9		0.00643	0.00042	0.78	0.00910	0.00062	0.94	OE
F6V7YT		0.00563	-0.00038	-0.70	0.00807	-0.00042	-0.64	OE
F9UGUT		0.00587	-0.00015	-0.27	0.00827	-0.00022	-0.33	OE
FBWHT6		0.00537	-0.00065	-1.20	0.00807	-0.00042	-0.64	OE
GCNMZJ	*	0.00577	-0.00025	-0.46	0.00920	0.00072	1.09	XX
HEQ6CJ		0.00627	0.00025	0.47	0.00887	0.00038	0.59	OE
HNGGWD		0.00587	-0.00015	-0.27	0.00850	0.00002	0.02	AE
HQKCFE		0.00590	-0.00011	-0.21	0.00823	-0.00025	-0.38	OE
HUPZYC	X	0.00633	0.00032	0.60	0.00700	-0.00148	-2.27	WD
K46KHY		0.00600	-0.00001	-0.02	0.00867	0.00018	0.28	OE
KEKMCC		0.00643	0.00042	0.78	0.00910	0.00061	0.94	OE
LR6C2F		0.00647	0.00045	0.85	0.00897	0.00048	0.74	OE
M4CR8C		0.00533	-0.00068	-1.26	0.00733	-0.00115	-1.76	OE
MH9VPG	X	0.00900	0.00299	5.56	0.0100	0.00152	2.32	XX
MNEPJC		0.00587	-0.00015	-0.27	0.00840	-0.00008	-0.13	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 153

Analysis 1610

1st Qtr 2026

Carbon & Low Alloy Steel, TIN (Sn)
TIN (Sn)

WebCode	Data Flag	Sample L15			Sample L16			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NZTZV9		0.00593	-0.00008	-0.15	0.00820	-0.00028	-0.43	OE
PHDW2U		0.00627	0.00025	0.47	0.00900	0.00052	0.79	OE
PVDPH6	X	0.0110	0.00499	9.28	0.0240	0.01552	23.71	GD
Q86VN9		0.00573	-0.00028	-0.52	0.00787	-0.00062	-0.94	OE
QEPN7Z		0.00567	-0.00035	-0.64	0.00820	-0.00028	-0.43	DR
RJC37Q	*	0.00633	0.00032	0.60	0.00967	0.00118	1.81	OE
RYNPHU		0.00640	0.00039	0.72	0.00850	0.00002	0.02	OE
T698BV		0.00620	0.00019	0.35	0.00870	0.00022	0.33	OE
TG3DGM		0.00633	0.00032	0.60	0.00833	-0.00015	-0.23	XX
TMUHCC		0.00600	-0.00001	-0.02	0.00867	0.00018	0.28	OE
UEUHCA		0.00550	-0.00051	-0.95	0.00790	-0.00058	-0.89	OE
VKCAJU		0.00630	0.00029	0.54	0.00860	0.00012	0.18	OE
WFYZAW		0.00567	-0.00035	-0.64	0.00833	-0.00015	-0.23	XX
WKQ6UZ	X	0.00100	-0.00501	-9.32	0.00133	-0.00715	-10.93	GD
WPXT82		0.00643	0.00042	0.78	0.00863	0.00015	0.23	OE
WRR99Y		0.00633	0.00032	0.60	0.00867	0.00018	0.28	XX
XTYA6G		0.00540	-0.00061	-1.14	0.00800	-0.00048	-0.74	OE
YQ3ZMZ	*	0.00700	0.00099	1.84	0.00833	-0.00015	-0.23	OE
YYMZFJ		0.00610	0.00009	0.16	0.00863	0.00015	0.23	OE
ZLB7BK		0.00620	0.00019	0.35	0.00870	0.00022	0.33	OE

Summary Statistics

	Sample L15		Sample L16	
Grand Means	0.00601	Percent	0.00848	Percent
Std Dev Btw Labs	0.00054	Percent	0.00065	Percent

Samples L15, L16 : AISI 1018, AISI 1018

Statistics based on 58 of 67 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1610

- D3RQEH (X) - Data for both samples are high. Inconsistent within the determinations of sample L16.
- E7QFGB (X) - Data for both samples are high. Inconsistent within the determinations of sample L15.
- HUPZYC (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L15.
- MH9VPG (X) - Data for sample L15 are high. Inconsistent within the determinations of both samples.
- PVDPH6 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- WKQ6UZ (X) - Data for both samples are low.



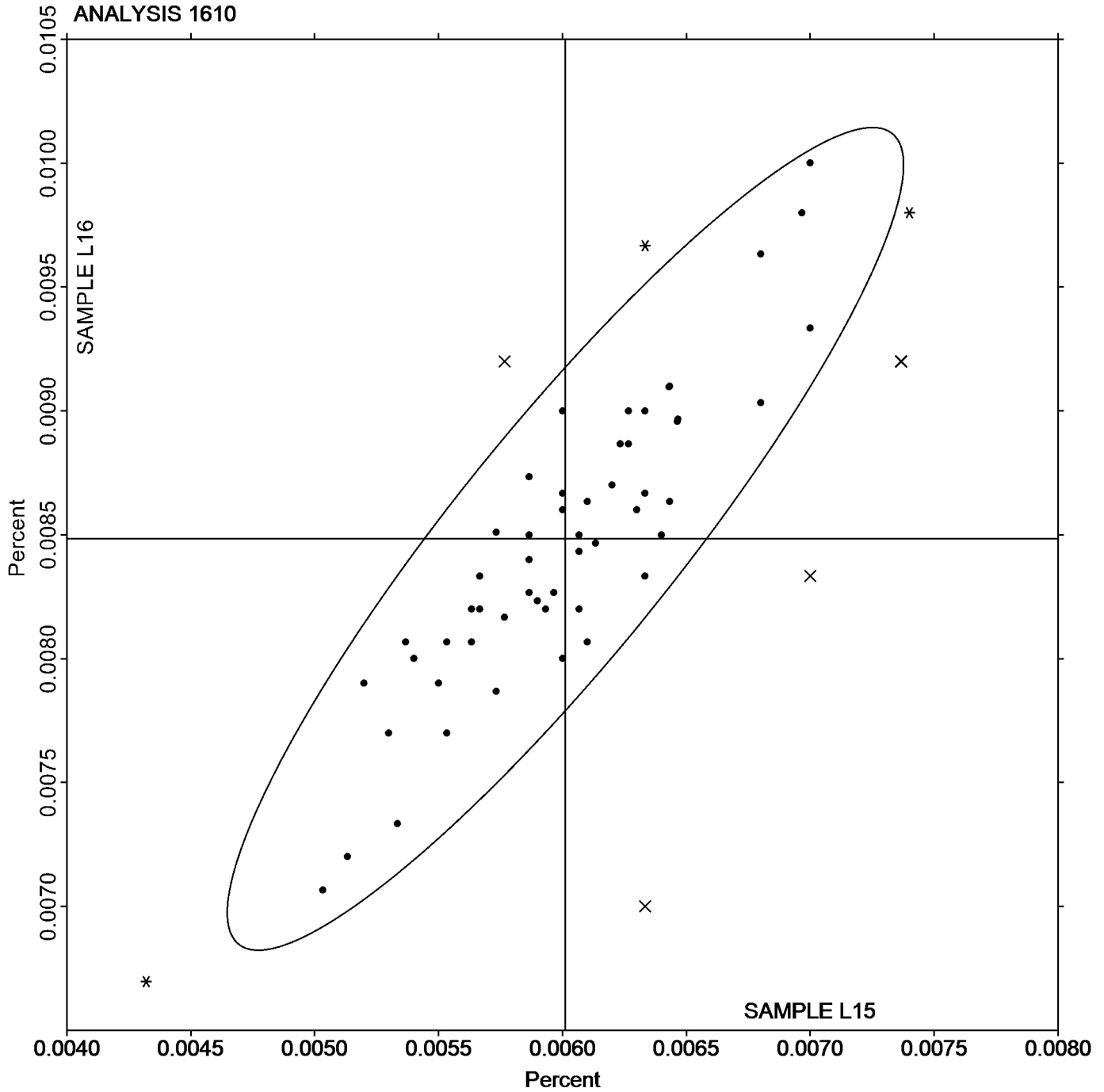
Analysis 1610

Carbon & Low Alloy Steel, TIN (Sn)

TIN (Sn)

SAMPLE L15
0.00601 Percent

SAMPLE L16
0.00848 Percent





-End of Report-