NVLAP LAB CODE:	,
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FASTENERS AND METALS TEST METHOD SELECTION LIST

This application is divided into the five major testing areas described in NIST Handbook 150-18, *NVLAP Fasteners and Metals*. Under the appropriate major area of testing, test group, and subgroup, write in the <u>complete</u> designation (e.g., ASTM E1473-92, SAE J418, MIL-STD-753C, etc.) and title of the test method, standard, or specification for which you are requesting accreditation.

An asterisk (*) beside the area, test group, or subgroup indicates that proficiency testing is required for test methods in that area, group, or subgroup. If you request accreditation under one or more of these categories, contact Collaborative Testing Services for enrollment information. See the Proficiency Testing Instructions on page 26 of this application for more information.

NVLAP Test Method Code	Test Method Designation	Test Method Title
21/A	MECHANICAL AI	ND PHYSICAL TESTING AND INSPECTION
For NVLAP use only	Aerospace nut te	sts of clinch and shank nuts
	Permanent set te	st of self-locking nuts
	Push out test of fl	loating plate nuts, gang channel nuts, and anchor nuts

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For NVLAP use only	Test Method Designation	Test Method Title
	Reusability test o	f self-locking internally threaded fasteners
	Room temperatu channel nuts and	re of three cycles test of floating plate nuts, gang anchor nuts
	Torque-out test	
		est of externally wrenched nuts of spline and hexagon gon (12 point) wrenching configuration

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For NVLAP use only	Test Method Designation	Test Method Title
	Adhesion	
	Adhesion of metallic	coatings on fasteners
	Bend	
	Bend test of full size	eyebolts
	Coating/plating thick	ness
	Measurement of fast	tener coating thickness - eddy-current method
	Measurement of fast	ener coating thickness - magnetic methods

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NVLAP LAB CODE:	

For NVLAP use only	Test Method Designation	Test Method Title
	Measurement of f	astener coating thickness - microscopical method
	Measurement of f	astener coating thickness - weight of coating
	Measurement of f	astener coating thickness - beta backscatter method
	Measurement of f	astener coating thickness - coulometric method
	Measurement of fa	stener coating thickness - dimensional change method

NVLAP LAB	CODE:										

For NVLAP use only	Test Method Designation	Test Method Title
	Measurement of f	astener coating thickness - X-ray methods
	Corrosion	
	Salt spray testing	of fasteners
	Humidity testing o	of fasteners
	Stress corrosion o	f fasteners

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For NVLAP use only	Test Method Designation	Test Method Title	
	Intergranular corr fasteners - nitric a	osion susceptibility in aust cid test	tenitic stainless steel
	,		
	Intergranular corr fasteners - oxalic	osion susceptibility of austacid etch test	tenitic stainless steel
	CASS test (copper	-accelerated acetic acid-salt s	spray test) of fasteners
	Water immersion corrosion resistant	test - test for anodic surf fasteners	ace contaminants on
		<u></u>	

NVLAP LAB CODE:	
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For NVLAP use only	Test Method Designation	Test Method Title
	Copper sulfate tes resistant fasteners	t - test for free iron on the surface of corrosion
	Elevated temperatu	
	Elevated temperatu	re testing capability
	Embrittlement	
	Hydrogen embrittle fasteners	ement (stress durability) of externally threaded
	Hydrogen embrittl fasteners (nuts)	ement (stress durability) of internally threaded

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NVLAP	LAB	CODE:					

For NVLAP use only	Test Method Designation	Test Method Title
	Test for embrittle	ement of metallic coated externally threaded fasteners
	· 	
	Fatigue	
	ratigue	
	Fatigue of full-siz	e threaded fasteners
	 	
	Hardness	
	Brinell hardness o	of fasteners
	Microhardness of	f fasteners

NVLAP LAB CODE:

	Test Method	
For NVLAP use only	Designation	Test Method Title
	* Rockwell hardne	ess of fasteners
	· · · · · · · · · · · · · · · · · · ·	
		
	Rockwell superfici	al hardness of fasteners
	Vickers nardness -	test forces from 9.807 to 1176 N (1 to 120 kgf)
		
	Impact	
	Charpy impact (v-ı	notab) tooting
	Charpy impact (v-	noton, testing

NVLAP	LAB	CODE:		1		2								

	Test Method	
For NVLAP use only	Designation	Test Method Title
, and the second se	Charpy impact (u-	notch) testing
	1	
	Magnetic permeal	ollity
	Magnetic permeat	oility of fasteners using a low-mu permeability indicator
	-	
	Prevailing torque	
	Prevailing torque	of full-size prevailing-torque type nuts
	Proof	
	Cone proof load o	f internally threaded fasteners (nuts)

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NVLAP LAB CODE:										

For NVLAP use only	Test Method Designation	Test Method Title
	Proof load of full-s	ize externally threaded fasteners
	Proof load of full-s	
	Proof load of inter	nally threaded fasteners (nuts)
	Rotational capacity	
		y of full-size threaded fasteners

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NVLAP	LAB	CODE:							

For NVLAP use only	Test Method Designation	Test Method Title
	Screw tests	
	Clamp load test	
	,	
	Drill-drive test	
		
	Drive test	
	Ductility test of th	read rolling and self-drilling tapping screws
	Duotinity tool of the	read reming and son animing tapping solews

NVLAP LAB	CODE:	. 50					5

For NVLAP use only	Test Method Designation	Test Method Title
Lise only	Proof torque test	
	Torsional strength	test of thread rolling and self-drilling tapping screws
	Shear	
	Single shear of ex	sternally threaded fasteners
	Double shear of e	xternally threaded fasteners

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NVLAP LAB CODE:												
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For NVLAP use only	Test Method Designation	Test Method Title
	Stress Rupture	
	Stress rupture of f	fasteners
	Tensile	
	* Axial tensile stre	rength of full-size threaded fasteners
	Breaking strength	of full-size eyebolts
	Tension testing of fasteners	of machined specimens from externally threaded

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	Test Method	
For NVLAP use only	Designation	Test Method Title
•	Total extension a	at fracture of externally threaded fasteners
	,	
	* Wedge tensile	strength of full-size threaded fasteners
	-	
	Yield strength of	full-size externally threaded fasteners
	Torque/tension	
	Torque-tension o	f full-size threaded fasteners
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For NVLAP use only	Test Method Designation	Test Method Title
	Recess strength test	in both the installation and removal directions
	Vibration	
	Vibration of full-size	threaded fasteners
	Washer tests	
		compressible-washer-type direct tension indicators
	Embrittlement test o	f washers

NVLAP LAB	CODE:						

For NVLAP use only	Test Method Designation	Test Method Title
	Recovery test of v	vashers
	Temper test of loc	k washers
	Twist test of lock	washers
		

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NVLAP LAB CODE:										l

For NVLAP use only	Test Method Designation	Test Method Title
21/B	METALLOGRAPH	I Y
	Decarburization a	and case depth measurement in fasteners
	Determination of	grain size of fasteners
	Macroscopic exa	imination of fasteners by etching
		· · · · · · · · · · · · · · · · · · ·
	Microscopic exar	mination of fasteners by etching

For NVLAP use only	Test Method Designation	Test Method Title
	Surface discontinui	ties of externally threaded fasteners
	Surface discontinui	ties of internally threaded fasteners (nuts)
21/C	NONDESTRUCTIVE	INSPECTION
		spection of fasteners
	Magnetic particle in	nspection of fasteners

NVLAP LA	B CODE:		

For NVLAP Designation use only	Test Method Title
21/D DIMENSIONAL	INSPECTION
External thread	d parameters - system 21
External thread	d parameters - system 22
External thread	d parameters - system 23
	
External thread	parameters - SAE fastener with MJ metric screw threads

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For NVLAP use only	Test Method Designation	Test Method Title
use offiny	External thread pa	arameters - ISO
	·	
	Internal thread pa	rameters - system 21
	. <u></u>	
	Internal thread no	remeters evetem 22
	mternar thread pa	rameters - system 22
	Internal thread pa	rameters - system 23
	Internal thread par	rameters - SAE fastener with MJ metric screw threads
	 	

NVLAP	LAB	CODE:									

For NVLAP use only	Test Method Designation	Test Method Title
	Internal thread par	rameters - ISO
	Dimensions of gerassembly fasteners	neral purpose fasteners and high-volume machine s
	Dimensions of sp specialized engines	ecial purpose fasteners and fasteners for highly ered applications
	Dimensions of ISO	grade A and B fasteners

NVLAP LAB	CODE:										

For NVLAP use only	Test Method Designation	Test Method Title
	Dimensions of ISC	O grade C fasteners
	,	
		eteners - hexagon and double hexagon (12 point) and
	spline sockets	
	Dimensions of fas	steners - gaging for slotted nuts
	Dimensions of fas	steners - flange screw heads and flange nuts
	Dimensions of fas	steners - straightness
	——————————————————————————————————————	

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NVLAP LAB CO	DE:					1						

Dimensions of fasteners - bearing surface squareness Surface texture * CHEMICAL ANALYSIS Solution chemical analysis Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen	For NVLAP use only	Test Method Designation	Test Method Title
Surface texture 21/E * CHEMICAL ANALYSIS Solution chemical analysis		•	
21/E * CHEMICAL ANALYSIS Solution chemical analysis		Dimensions of fast	teners - bearing surface squareness
21/E * CHEMICAL ANALYSIS Solution chemical analysis			
21/E * CHEMICAL ANALYSIS Solution chemical analysis			
Solution chemical analysis		Surface texture	
Solution chemical analysis			
Solution chemical analysis		<u></u>	
	21/E		
Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen		Solution chemical	analysis
Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen			
Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen			
		Combustion analys	sis for carbon, sulfur, oxygen, nitrogen, and hydrogen

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NVLAP LAB	CODE:												

	Test Method	
For NVLAP use only	Designation	Test Method Title
	Optical emission s	pectrochemical analysis
		
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	V fl	(VDE) an actual benefit at a solution
	X-ray fluorescence	e (XRF) spectrochemical analysis
	Energy dispersive	X-ray analysis
	Spot test analysis	
	opor test analysis	

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PROFICIENCY TESTING INSTRUCTIONS

Laboratories seeking accreditation in those areas, groups, or subgroups that require proficiency testing must enroll in the Collaborative Testing Services (CTS) fasteners and metals program for those areas, groups, or subgroups.

Laboratories must apply directly to CTS for proficiency testing within 14 calendar days of applying to NVLAP for accreditation.

CTS can be contacted at:

Collaborative Testing Services P.O. Box 1049 Herndon, VA 22070 Phone: (703) 742-9107 Fax: (703) 481-0375.