PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Accu-Test Labs

7821 Pinemont Drive, Houston, TX 77040

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Chemical, Mechanical, and Metallurgical Testing

(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President/Operations Manager

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
October 12, 2015	October 25, 2019	January 31, 2022

Accreditation No.:	*Certificate No.:*
87082	L19-551

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com.

Certificate of Accreditation: Supplement

Accu-Test Labs
7821 Pinemont Drive, Houston, TX 77040
Contact Name: Ashley Ogrodowicz Phone: 713-460-3655

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT
Chemical[F]	Carbon and Alloy, Stainless Steel, Nickel Alloy, Aluminum, Cast Iron, Cobalt Alloy	Elemental Composition by Optical Emission Spectroscopy	ASTM A751	C, Mn, P, S, Si, Cr, Mo, Ni, Cu, Co, Nb, V, Al, Ti, Pb, B, Fe, Sn, W, Mg, Ca
	Steel, Iron, Nickel, and Cobalt Alloy	Elemental Composition by Combustion	ASTM E1019	C: 0.005 % to 4.5 %
				S: 0.000 4 % to 0.011 %
				N: 0.001 % to 0.4 %
				O: 0.001 % to 0.012 1 %
				H: 0.000 1 % to 0.001 %
Mechanical[F]	Metallic Materials - Charpy Impact	Energy Absorbed (Ft•lbs) Percentage Shear Fracture Lateral Expansion	ASTM A370	270 lb
				400 lb
	Metallic Materials - Hardness	Brinell Hardness	ASTM E10	3 000 kgf 178 HBW to 400 HBW
		Vickers Hardness	ASTM E384	107 HV to 940 HV
		Rockwell Hardness	ASTM E18	22 HRC to 63 HRC 46 HRBW to 92 HRBW 74 HR15N to 90 HR15N
	Metallic Materials - Tensile	Tensile Strength, Yield Strength, Elongation Reduction of Area	ASTM A370	Load Cell Capacity: 200 000 lbf
				Load Cell Capacity: 400 000 lbf
				Load Cell Capacity: 18 000 lbf
				Load Cell Capacity: 120 000 lbf
				Load Cell Capacity: 60 000 lbf
	Fracture Toughness	Crack Tip Opening Displacement (CTOD)	BS 7448 Part 1 & Part 2, ISO 12135 & 15653, ASTM E1820	Specimen Geometry: SEN(B), C(T) Test Temperatures: -40°F to +72°F Loads: 400 lbf to 100 000 lbf
		J-Integral (J_{IC})		
Mechanical (Metallurgical)[F]	Metallic Materials	Grain Size (Comparison), Inclusion Content, Microstructure, Macrostructure, Preparation, and Point Count	ASTM E112 ASTM E45 ASTM E407 ASTM E340 ASTM E3 ASTM E562	Visual Evaluation

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location. Example: Outside Micrometer [F] would mean that the laboratory performs this testing at its fixed location.