Scope of Accreditation
For
Berg Engineering & Sales Co., Inc.

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Rolling Meadows, IL 60008
Stephen Berg
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In recognition of a successful assessment to ISO/IEC 17025:2005, accreditation is granted to **Berg Engineering & Sales Co., Inc.** to perform the following Calibrations:

Accreditation granted through: **February 4, 2011**

Calibration

Length - Dimensional Metrology – Hand Tools and Precision Gages 1D

Calibration Parameter/Equipment	Range	Best Measurement Capability (+/-) [2]	Remarks
Ultrasonic Corrosion Thickness Gauge	0.02 in to 24 in	0.0018 in	ASTM E797
Ultrasonic Precision Thickness Gauge	0.007 in to 24 in	0.0015 in	

Length - Dimensional Metrology – Hand Tools and Precision Gages 2D

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
XY Stage (X Value)	0 mm to 5 mm	0.0059 mm	Compared to stage micrometer
XY Stage (Y Value)	0 mm to 5 mm	0.0059 mm	
Brinell Scope	0 mm to 7 mm	0.058 mm	

Length - Dimensional Metrology – Artifacts and Standards 1D

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Optical Measuring Scope	0 mm to 7 mm	0.0578 mm	Compared to stage micrometer

Length - Dimensional Metrology – Other

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Ultrasonic Velocity Gauge	50 000 in/sec to 300 000 in/sec	0.11 µsec	ASTM E494
Ultrasonic Flaw Detector (Vertical Linearity)	0.01 in to 1100 in	1 %	ASTM E317
Ultrasonic Flaw Detector (Horizontal Linearity)	0.01 in to 1100 in	0.59 %	

Mass – Hardness

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Indirect Verification of Rockwell Hardness Testers[1]	HRA Low High HRB Low Middle High HRC Low Middle High HR15N Low High HR15T Low High HR30T Low High HR30N Low Middle High	 0.258 HRA 0.159 HRA 0.978 HRB 0.954 HRB 0.58 HRB 0.77 HRC 0.354 HRC 0.312 HRC 0.532 HR15N 0.262 HR15N 0.634 HR15T 0.428 HR15T 0.50 HR30T 0.358 HR30T 0.444 HR30N 0.38 HR30N 0.31 HR30N	Indirect Method ASTM E18
Portable Rockwell Hardness Tester	HRC Low Middle High	 0.77 HRC 0.354 HRC 0.326 HRC	Indirect Method ASTM E110
Brinell Test Block	500 kg to 3000 kg	5.18 BHN	Indirect Method ASTM E10
Brinell Optical Scanning System	140 BHN to 700 BHN	0.00804 mm	Indirect Method ASTM E10
Direct Verification of Brinell Hardness Tester	1 kgf to 3000 kgf	6.7 kgf	Direct Method ASTM E10
Leebs Hardness Tester	200 LD to 765 LD	20 LD	Indirect Method ASTM A956
Leebs Hardness Test Block	500 LD to 800 LD	19 LD	Indirect Method ASTM A956
Portable Hardness Gauge UCI Method	20 HRC to 66 HRC	0.29 HRC	Indirect Method ASTM A1038
Vickers Micro Hardness Tester	200 HV to 700 HV	4.38 VHN	Indirect Method ASTM E384
Knoop Micro Hardness Tester	200 HK to 700 HK	3.82 KHN	Indirect Method ASTM E384

Electricity and Magnetism – Current

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Magnetic Inspection Unit	500 A to 10 000 A	2.8 A	ASTM E1444

Electricity and Magnetism – Magnetic Properties

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Magnetic Inspection Unit Gauss Meter	0 g to 30 g	0.15 g	ASTM E1444

Time and Frequency – Frequency / Period

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Magnetic Inspection Unit Shot Duration	0 sec to 3 sec	0.42 sec	ASTM E1444

Amount of Substance – Other – Conductivity and pH

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
Electromagnetic (Eddy Current) Conductivity Meter	0 % to 100 % IACS	0.022 % IACS	ASTM E1004

Luminous Intensity

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) [2]	Remarks
UV/Black	(1 to 10 000) µw/cm²	1.9 µw/cm²	ASTM E1444
White Light	(1 to 1999) FC	0.77 FC	

Notes:

1) Laboratory offers calibration services at the laboratory's own facilities and at the client or other agreed upon facilities.
2) Best uncertainties represent expanded uncertainties at approximately the 95% confidence level using a coverage factor of k=2.
3) IACS unit of measure is defined as Eddy Current electrical conductivity in percentage to the International Copper Standard whereas 0.58 X 10^8 S/m is equivalent to 100% IACS.

Approved by: _____ Date: May 5, 2009

R. Douglas Leonard
Chief Technical Officer

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