AMASTEEL DIVISION

915 Tabor Street
Adrian, MI 49221

ERVIN

PRODUCT CERTIFICATION REPORT

SEPTEMBER 12, 2025	A25-327	SO00125009396
Date	Certification No.	Ervin Order No.
UKERA LAB INC.	SPN009	9-12-25
Customer	P.O. No.	Shipping Date
		109583
Attention	Release No.	Customer No.
13838 BENTLEY PLACE, UNIT A		S-780 MIL/ASR 780
Address		Product shipped

CERRITOS	CA	90703	USA
City	State	Postal code	Country

S0780-Q-DW-1191	6.000 TONS	AK250941
Product Code	Quantity Shipped	*Manufacturing Date (lot#)

* Specification(s) Certified to (including revision level): **AMS2431/1G, AMS2431E, AMS-S-13165A, MIL-S-13165C, J827 Oct 19**

CERTIFICATION TEST RESULTS:

SIEVE ANALYSIS			Cumulative % Retained	
MM	Inches	Specification	Sample 1	Sample 2
3.55	.1320	0% MAX	0	0
2.80	.1110	2% MAX	0	0
2.36	.0937	50% MAX	33	31
2.00	.0787	90% MIN	100	99
1.70	.0661	98% MIN	100	100

HARDNESS		
RC - Converted from	1000	Grams
	KNOOP	Hardness Number
Specification	45-52	HRC - 90% min
# of readings	20	
Average	48	HRC
Range	46-50	HRC

CHEMICAL ANALYSIS		Percent%	
Element	Specification	Sample 1	Sample 2
Carbon	0.80-1.20	.97	.95
Manganese			
330 and up	0.70-1.20	.89	.90
170-190	0.50-1.20		
70-130	0.35-1.20		
Silicon AMS2431	0.40-1.50	.92	.94
Silicon J827	0.40 Min	.92	.94
Sulfur	0.05 Max	.027	.025
Phosphorous	0.05 Max	.027	.026

MISCELLANEOUS TESTS			
Characteristic	Specification	Results	
Marginal Particles AMS 2431	11 max per 1 SQ. IN.	5	
Unacceptable Particles AMS 2431	2 max per 1 SQ. IN.	0	
Deformed Particles MIL-S-13165	11 max per 1 sq. in.	5	
Internal Defects	15% Max	Less Than	15%
Cracks	10% Max	Less Than	10%
Hollows	10% Max	Less Than	10%
Shrinkage	10% Max	Less Than	10%
Density	7.0 gr/ml Min.	7.14	7.14
Microstructure: Uniform tempered martensite with fine, well-distributed carbides.			

COMMENTS: Reference# 250910

Signature: Jared B. Duckett
Revised 3/7/17

Title: LABORATORY SUPERVISOR

C43-1A1

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1. This report is confidential and proprietary information for the customer requiring this report.

2. This report will not be copied and/or distributed outside of Ervin without written consent of the customer.

3. The following applicable test procedures were used to generate the data included in this report:

SAE International:

SAE J442 - 2022-05	Test Strip Holder and Gage for Shot Peening
SAE J443 - 2017-08	Procedures for Using Standard Shot Peening Test Strip
SAE J444 - 2023-06	Cast Shot and Grit Size Specifications for Peening and Cleaning
SAE J445 - 2022-05	Metallic Shot and Grit Mechanical Testing
SAE J827 - 2019-10	Cast Steel shot
SAE J1993 - 2019-02	Cast Steel Grit
SAE AMS 2431E	Peening Media General Requirements
SAE AMS 2431/1G	Cast Steel Shot, Regular Hardness (45-52 HRC)
SAE AMS 2431/2G	Cast Steel Shot, High Hardness (55-62 HRC)

ASTM:

B 215 - 20	Standard Practices for Sampling Finished lots of Metal Powders
D 512-23	Standard Test Method for Chloride Ion in Water
D 4940-15(2020)	Standard Test Method for Conductimetic Ionic Contamination of Blasting Abrasives
* E 11 - 24	Specification for Wire-Cloth Sieves for Testing Purposes
E 140 - 12B(2019)e1	Hardness Conversion Tables for Metals (Relationship Between Brinell Hardness, Vickers Hardness, Rockwell Hardness, Rockwell Superficial Hardness and Knoop Hardness
E 305 - 21	Standard practice for Establishing and Controlling Spectrochemical Analytical Curves
E 384 - 22	Test methods for Microhardness of Materials
E 406 - 19	Standard Practice for Using Controlled Atmospheres in Spectrochemical Analysis
E 415 - 21	Standard Test Method for Optical Emission Vacuum Spectrometric Analysis of Carbon and Low Alloy steel
E 1010 - 16	Standard Practice for Preparation of Disk Specimens of Steel and Iron for Spectrochemical Analysis by Remelting
E 1257 - 16	Standard Guide for Evaluating Materials Used for Surface Preparation in Spectrochemical Analysis

Ervin Industries, Inc., Quality Instructions:

Q. I. No. - AL & BL-5	Durability Test
Q. I. No. - AL & BL-43	Transmitted Energy Test