



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ARCELORMITTAL - INDIANA HARBOR
 CHEMICAL AND METALLURGICAL LABS
 3210 Watling Street, MC 2-104
 East Chicago, IN 46312
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MECHANICAL

Valid To: March 31, 2019

Certificate Number: 0111.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on steels (carbon low alloy, free machining, low alloy) and steel related products (zinc- or aluminum-coated, painted, formed), raw materials (coal, coke, iron pellets, iron, zinc), fastener raw materials and by-products (slags):

Hardness Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Technical Investigations	Rockwell B, C, 15T, 30T, 45T	ASTM E18; A370; SAE J417
R&D	Rockwell B, C, 15T, 30T, 45T	ASTM E18; A370; SAE J417
	Vickers: HV 200gf, 300gf and 500gf	ASTM E384
	Knoop: HK 200gf, 300gf and 500gf	ASTM E384
2 Continuous Galvanizing Line	Rockwell B, F, 15T, 30T, 45T	ASTM E18; A370; SAE J417
Finishing East	Rockwell B, F, 15T, 30T, 45T	ASTM E18; A370; SAE J417

Coal and Coke Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Blast Furnace Chemical Lab	Coke Stability	ASTM D3402
	Coke Strength After Reaction, CSR	ASTM D5341
	Preparation of Coke Samples	ASTM D346
	Sieve Analysis (Coke)	159W43 ¹
	Sieve Analysis (Pulverized Coal)	ASTM D197

Coating Adherence Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
2 Continuous Galvanizing Line	Zinc on Steel: Double Bend	ASTM A653; SOP 15-05-007 ¹
	Zinc on Steel: V-Bend Tape Test	Toyota Standards and Test Methods for Steet Steel, SOP 15-05-006 ¹

Impact Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Met Testing	Charpy Impact	ASTM E23; A370
	Drop Weight Tear Test, DWTT (Breaking Specimens)	ASTM E436; API RP 5L3
R&D	Charpy Impact	ASTM E23; A370
	Drop Weight Tear Test, DWTT (Breaking Specimens and Rating Fracture Surface)	ASTM E436; API RP 5L3

Tensile Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Met Testing	1" x 9"	ASTM E8; A370; ISO 6892-1; JIS Z2241
	n-Value	ASTM E646; ISO 10775; JIS Z2254
	r-Value	ASTM E517; ISO 10113; JIS Z2253
R&D	1" x 9"	ASTM E8; A370; ISO 6892-1; JIS Z2241
	n-Value	ASTM E646; JIS Z2254; ISO 10775

Metallurgical Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Technical Investigations	Rating Microcleanliness	ASTM E45
	Rating Grain Size (Comparative and Intercept)	ASTM E112
	Rating Carbide Morphology	168J003 ¹
	Rating Grain Shape	168J002 ¹
	Micro Preparation	ASTM E3; 168J048 ¹
	Surface Roughness	SAE J911; ASME B46.1
	Qualitative Microanalysis of Particle in Steel by SEM/EDAX	168J046 ¹
2 Steel Producing Metallurgical	Rating Sulfur Prints	ASTM E1180; 09-0409-W-626 ¹
	Macroetch	ASTM E381; 09-0409-W-634 ¹

Other Tests:

<u>Lab/Location</u>	<u>Test</u>	<u>Test Method</u>
Blast Furnace Chemical Lab	Iron Pellet Contraction	153W79 ¹
R&D	Core Loss and Permeability (Epstein)	ASTM A343
	Dent Test on Steel	182W300 ¹ ; 182W301 ¹
	Fatigue Tests: - Strain Controlled Fatigue - Stress Controlled Fatigue	ASTM E606 ASTM E466
	Surface Roughness	SAE J911; ASME B46.1
Motor Lamination	Core Loss and Permeability (Epstein)	ASTM A343
	Surface Roughness	SAE J911; ASME B46.1

¹In-House Method



Accredited Laboratory

A2LA has accredited

ARCELORMITTAL - INDIANA HARBOR

East Chicago, IN

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 16th day of January 2017.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0111.02
Valid to March 31, 2019
Revised February 27, 2019

For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.