## ArcelorMittal

## MATERIAL CERTIFICATION REPORT

ArcelorMittal LaPlace 138 HWY 3217 LaPlace LOUISIANA 70068 Telephone (985) 652-4900 Export Country = USA

Tested in Accordance

Sales Order 149596-2

2015/08/31

KN-642517

With: ASTM A6

Product

Unequal Angles Cust 40006281 Ref. 80831221

Heat NO.

L99324

Grade ABSA

Pieces 28

Cust . Mat .

Length 40' 00"

Weight 21952

Size

8"X4"X1/2"X19.600

| CHEMICAL<br>ANALYSIS |       | MECHANICAL         | TEST 1    |         | TEST 2    |         | TEST 3   |        |
|----------------------|-------|--------------------|-----------|---------|-----------|---------|----------|--------|
|                      |       | PROPERTIES         | IMPERIAL  | METRIC  | IMPERIAL  | METRIC  | IMPERIAL | METRIC |
| C                    | 0.11  | YIELD STRENGTH     | 53300 PSI | 367 MPa | 54300 PSI | 374 MPa | T        |        |
| Mn                   | 1.02  | TENSILE STRENGTH   | 71700 PSI | 494 MPa | 71200 PSI | 491 MPa |          |        |
| P                    | 0.006 | ELONGATION         | 30 %      | 30 %    | 25 %      | 25 %    |          |        |
| S                    | 0.018 | GAUGE LENGTH       | 8 IN      | 203 mm  | 8 IN      | 203 mm  |          |        |
| Si                   | 0.20  | BEND TEST DIAMETER |           |         |           |         |          |        |
| Cu                   | 0.24  | BEND TEST RESULTS  |           | 1       |           |         |          |        |
| Ni                   | 0.14  | SPECIMEN AREA      | 1         | İ       |           |         |          |        |
| Cr                   | 0.12  | REDUCTION OF AREA  |           |         |           |         |          |        |
| Mo                   | 0.058 | IMPACT STRENGTH    |           |         |           | 1       |          |        |
| СЬ                   | 0.015 |                    |           |         |           |         |          |        |
|                      | ^     |                    |           |         |           |         |          |        |

| IMPACT STRENGTH | IMPERIAL | METRIC | INTERNAL CLEANLINESS | GRAIN SIZE      |
|-----------------|----------|--------|----------------------|-----------------|
| AVERAGE         |          |        | SEVERITY             | HARDNESS        |
| TEST TEMP       | 1        |        | FREQUENCY            | GRAIN PRACTICE  |
| ORIENTATION     | 1        |        | RATING               | REDUCTION RATIO |

A709-36, Mil-s-22698C Am 1&2 Cl U Yr 94, Grade A.

Ci 5.1 CE 0.34

0.012

В Al Sn

N Ti

A36-08. Heat is free of Mercury contamination in the process.

I hereby certify that the material test results presented here are from the reported heat and are correct. All tests were performed in accordance to the specification reported above. All steel is electric arc furnace melted (billets), manufactured, processed, tested in the U.S.A with satisfactory results. No weld repair was performed on this heat.

| Notarized upon request:                                       | Signed | Mark Zoluans                               |
|---|--------|--|
| Sworn to and subscribed before me on this 31st day of August, | 2015   | MARK EDWARDS, QUALITY ASSURANCE SUPERVISOR |

Notary Public Parish/County

Direct any questions or necessary clarifications concerning this report to the Sales Department 1-800-535-7692 (USA)