

# Material Test Report

Heat Code: YMF

Coffer Corp.

An AFGlobal Company

13770 Industrial Rd. Houston, TX 77015

ISO 9001:2008 Certified

Sales: (713) 868-4421 Fax: (713) 455-8366

|   |                                      |                        |         |
|---|--------------------------------------|------------------------|---------|
| PLESA STEEL INC. 00012015   | PO: 282                              | Sales Order: 140295    | Line: 1 |
| 11811 NORTH FRWY STE 500  | Item Code: 0152912100-0020F          | Qty Shipped: 20        |         |
| Houston, TX 77060   | Item Desc: FLG 12.00 0150 SO RF A105 | NHT COFFR              |         |
|   | Supplier: CMC                        | Supplier Heat: 3048711 |         |
| Spec: ASTM A105/A105M-(13)/ASME SA 105/SA 105M-(13) Section II Part A |                                      |                        |         |

| Element | (%wt)       | Ladle | Product | EPCRA | CAS#      | Element   | (%wt)      | Ladle | Product | EPCRA | CAS#      |
|---------|-------------|-------|---------|-------|-----------|-----------|------------|-------|---------|-------|-----------|
| C       | Carbon      | 0.21  |         |       |           | Cr        | Chromium   | 0.08  |         | ✓     | 7440-47-3 |
| Mn      | Manganese   | 0.98  |         | ✓     | 7439-96-5 | Mo        | Molybdenum | 0.02  |         |       |           |
| P       | Phosphorous | 0.008 |         |       |           | V         | Vanadium   | 0.002 |         |       |           |
| S       | Sulphur     | 0.012 |         |       |           | Cb        | Columbium  | 0.002 |         |       |           |
| Si      | Silicon     | 0.22  |         |       |           | C.E.      |            | 0.41  |         |       |           |
| Cu      | Copper      | 0.23  |         | ✓     | 7440-50-8 | CuNiCrMoV |            | 0.411 |         |       |           |
| Ni      | Nickel      | 0.08  |         | ✓     | 7440-02-0 | CrMo      |            | 0.099 |         |       |           |

| Mechanical Testing         |  |                   |  | Other        |   |
|----------------------------|--|-------------------|--|--------------|---|
| Test Lab                   |  | AFG               |  | EF           | Y |
| Test Bar Size              |  | SACRIFICIAL PIECE |  | Fully Killed | Y |
| HBW                        |  | 163 - 167         |  |              |   |
| Elg (%)                    |  | 31                |  |              |   |
| RA (%)                     |  | 60                |  |              |   |
| Tensile Specimen Size (in) |  | 3491              |  |              |   |
| Tensile (ksi)              |  | 82.3              |  |              |   |
| Yield (ksi)                |  | 45.9              |  |              |   |
| Gauge Length               |  | 2                 |  |              |   |

Product compliant with NACE MR0175 / ISO 15156 latest edition and flange dimensions to ASME B16.5 - 2013

\* No Weld repair performed.  
 \* Ladle Chemical Analysis results are reported from the raw material suppliers MTR.  
 \* Forgings are capable of passing hydrostatic test compatible with the appropriate rating.  
 \* Elongation taken from a round specimen.  
 \* Yield strength was determined using the .2% offset method.  
 \* All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.  
 \* When reported on MTR: Tensile Testing Per ASTM E8; Brinell Hardness Per ASTM E10; Charpy Testing Per ASTM E23  
 \* AF Global manufactures materials according to a certified Quality Management System conforming to ISO 9001:2008 and PED 97/23/EC, Annex 1, Section 4.3

The recording of false, fictitious, or fraudulent statement or entries on this document may be punishable as a felony under federal statute.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1142772  
 Certification Date: 10/2/2014  
 Issued By: Juan Diaz



Rina Sane - Metallurgical Lab Manager

This report is issued in compliance with the requirements of EN10204 3.1/ISO 10474 3.1.b