

# Material Test Report

Heat Code: 4500876

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: 411	Sales Order: 150042	Line: 1
5100 WESTHEIMER RD STE 200	Item Code: 0901912180-P021F		Qty Shipped: 3
Houston, TX 77056	Item Desc: FLG 12.00 0900 WN RF 80 A105 NRM COFFR		
	Supplier: MF RINGS	Supplier Heat: 4500876	
Spec: ASTM A105/A105N-(14)/ASME SA 105/SA 105N-(15) Section II Part A - Normalized			

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.19				Cr	Chromium	0.02		✓	7440-47-3
Mn	Manganese	1.26		✓	7439-96-5	Mo	Molybdenum	0.002			
P	Phosphorous	0.015				V	Vanadium	0.00			
S	Sulphur	0.004				Cb	Columbium	0.0000			
Si	Silicon	0.24				C.E.		0.40			
Cu	Copper	0.01		✓	7440-50-8	CuNiCrMoV		0.028			
Ni	Nickel	0.00		✓	7440-02-0	CrMo		0.02			

Mechanical Testing				Heat Treat			
Test Lab		SUPPLIER		Norm. Temp. (F)		1652	
Test Bar Size		SACRIFICIAL PIECE		Norm. (Hrs)		4	
HBW		153 - 153		Norm. Cooling Type		AIR	
Elg (%)		32.2					<b>Other</b>
RA (%)		66.7		EF		Y	
Tensile Specimen Size (in)		.500		Fully Killed		Y	
Tensile (ksi)		73.3					
Yield (ksi)		47.8					
Gauge Length		2					

Product compliant with NACE MR0175/ISO 15156-2:2009 Annex A (A.2.1.2, A2.1.3).  
 Product compliant with NACE MR0103-2012, Section 2.1.2 and 2.1.4.  
 Flange dimensions to ASME B16.5 - 2013.

\* No Weld repair performed.  
 \* Ladle Chemical Analysis results are reported from the raw material suppliers MTR.  
 \* Tensile taken from a round specimen. Measurement of elongation after fracture.  
 \* 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

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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 alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1232668  
 Certification Date: 12/11/2015  
 Issued By: John Saucedo



Rina Sane - Metallurgical Lab Manager