



# Material Test Report

Heat Code: ASW

An Ameri-Forge Group Company  
13770 Industrial Rd., Houston, TX 77015

ISO 9001:2000 Certified

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

PLESA ANAHUAC Y CIAS	PO: 4660	Sales Order: 65134	Line: 2
SA DE CV AV. VALLE DE LAS	Item Code: 0601200102-0021F		Qty Shipped: 50
ALAMEDAS 66-0	Item Desc: FLG 02.00 0600 WN RF XH A105 NRM COFFR		
54940 TULTITLAN, EDO MEX	Supplier: CMC	Supplier Heat: 3001898	

Spec: ASTM A 105/A 105M-03/ASME SA 105/SA 105M-04 Normalized

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.20				Ni	Nickel	0.11		✓	7440-02-0
Mn	Manganese	0.91		✓	7439-96-5	Cr	Chromium	0.10		✓	7440-47-3
P	Phosphorous	0.007				Mo	Molybdenum	0.033			
S	Sulphur	0.024				V	Vanadium	0.001			
Si	Silicon	0.20				Cb	Columbium	0.003			
Cu	Copper	0.23		✓	7440-50-8	C.E.		0.40			

Mechanical				Heat Treat			
Test Lab		AFG		Norm. Temp. (F)		1675	
Test Bar Size		SACRIFICIAL PIECE		Norm. (Hrs)		4.0	
HBW		146-146		Norm. Cooling Type		AIR	
Elg (%)		30.0		Norm. Location		AFG	
RA (%)		63.0					
Tensile Specimen Size (in)		0.245					
Tensile (ksi)		73.6		Country of Origin		USA (US)	
Yield (ksi)		47.1		EF		Y	
Gauge Length		1.00					

No Weld repair performed. Chemical Analysis results shown are actual. Forgings are capable of passing hydrostatic test compatible with the appropriate rating. Elongation taken from a round specimen. 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. Yield strength was determined using the 0.2% offset method.

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.: 142976  
Certification Date: 6/2/2008

*Puneet Sagar*  
Puneet Sagar - Plant Metallurgist