

CERTIFICATE OF INSPECTION & TEST

ORIGINAL



ST&H CORPORATION
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(EN 10204 3.1)

Certified to ISO9001:2008, PED97/23/EC by LRQA
 Report No : MYM6330 Date: MAY.02.2011

Customer : BROWNSVILLE STEEL CITY, LLC										Contract No. : BSC2011-231			Heat Treatment	
Spec. For Material : ASTM/ASME A/SA105-05(NACE MR-0175)													AS FORGED	
Chemical Composition (%)		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb		
Heat No.	MAX	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.120	0.400	0.080			
	MIN		0.100	0.600										
5169A		0.190	0.280	0.840	0.027	0.020	0.060	0.080	0.030	0.060	0.010			
Tension Test						Charpy Impact Test (10x10 mm Specimen Size)				Hardness Test (HB)	Bending Test 90:120(180°)	ANSI B16.5-2003 GOOD		
Size of Specimen(mm)		Yield Strength MPa	Tensile Strength MPa	Elongation %	Red of Area %	Individual		Average					Notch Type	
Dia	Gage Length					min	min							
12.5	50	MAX				Test Result				Temp	187			
		MIN	250.000	485.000	22.000	30.000	①	②	③		Average		137	
12.5	50		380.000	552.000	27.000	46.000						154		
ITEM / SIZE		Q'TY	ITEM / SIZE		Q'TY	ITEM / SIZE		Q'TY						
150LBS SORF 10"		200	150LBS WNRF STD 6"		100	BLANK								
150LBS SORF 12"		48	BLANK											
150LBS SORF 3"		299												
300LBS SORF 3"		20												
150LBS WNRF STD 3"		500												

Ultrasonic Examination
N/A

Magnetic Particle Examination
N/A

Remarks :
**CE = 0.36 (LONG FORMULAR)

NOTE :
 1MPa = 145.037 psi
 1MPa = 0.145037 ksi
 1psi = 0.006895 MPa
 1ksi = 6.89476 MPa

W.C:Water Cool O.C.Oil Cool
 A.C:Air Cool N.A:Non Action
 N:Normalized A:Annealed
 Q.T:Quenched and Tempered
 N.T:Normalized and Tempered

We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.

Witnessed by/ K. S. KIM

Manager of QA Dept/ Y. M. CHOI