

Rob  
1-204-886-3204



# GLORIA MATERIAL TECHNOLOGY CORP. INSPECTION CERTIFICATE

台南新營市新中路35號1樓  
TEL: NO. 8520000000000000  
TAINAN, TAIWAN, R.O.C.  
TEL: (06)6520000  
FAX: (06)6520088

Messrs. ENERGY STEEL PRODUCTS INC.

Order No: 2005009402      Grade: AISI 316/316L  
FILB NO: 2007001653-B      Size: 11"  
HEAT-Lot No: U2106-10      Weight: 1993.0KG 4393.811LB  
Condition: HF-Solution Annealed-Turned

P.O.NO.: 91662-000 OP  
Date: 03/21/2007  
P'cs: 1

### Chemical Composition (wt%)

	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Co
Min.			1.25		0.020	10.00	16.00	2.00		
Max.	0.030	1.00	2.00	0.040	0.030	14.00	18.00	3.00	0.75	
Result	0.029	0.27	1.55	0.029	0.030	10.43	16.46	2.14	0.43	0.08

N  
Min.  
Max. 0.10  
Result 0.06

### Mechanical Properties Spec.

	Hardness	Grain Size
Condition	1/2R	
Spec. Min.		
Spec. Max.	223HRW	
Result	152HRW	6.5

### Tensile Test

	Elongation(A)	Tensile Strength(Rm)	Yield Strength(Rp)	Reduction of Area(Z)
Condition	(Avg)	(Avg)	(Avg)	(Avg)
Min.	40%	75KSI	30KSI	50%
Max.				
Result	63.3%	80KSI	38.9KSI	74%

### Specification:

1. ASTM A182/A182M-05a.
2. ASTM A193/A193M-05 class 1 B8M.
3. ASTM A262-02 practice B.
4. ASTM A276-05a.
5. ASTM A314-97(1999).
6. ASTM A320/A320M-04 class 1 B8M.
7. ASTM A479/A479M-05.
8. ASTM A484/A484M-05.
9. ASME SA-182 (2004 SECTION II).
10. ASME SA-479 (2004 SECTION II).
11. ASME SA 320 B8M CL1 (2004 SECTION II).
12. ASME SA 193 B8M CL1 (2004 SECTION II).
13. AMS 5648K (2002).
14. AMS 5653F (2002).
15. AMS 5653F (2002).



Mars Wang  
QA SECTION  
*Mars Wang*

ISO 9001 2004-AS9100  
Reg. No.: 020799  
CERT: 0028061105423

Our quality and environmental management systems have been certified by AS9100, ISO9001 QMS and 14001 EMS.  
We hereby certify that the material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.  
We hereby the Inspection Certificate comply with EN 10204 3.1.



# GLORIA MATERIAL TECHNOLOGY CORP. INSPECTION CERTIFICATE

台南縣新營市新中路95號1樓  
1FL, NO.95, HEN CHUNG RD, HSIN YING,  
TAINAN, TAIWAN, R.O.C.  
TEL: (06)6520000  
FAX: (06)6520088

Messrs: ENERGY STEEL PRODUCTS INC.

Order No: 2005009402      Grade: AISI 316/316L

P.O.NO.: 91662-000 OP

FILE NO: 2007001653-B      Size: 11"

Date: 03/21/2007

HEAT-Lot No: U2106-10      Weight: 1993.0KG 4393.81LB

P'cs: 1

Condition: HF-Solution Annealed-Turned

- 16. MIL-S-862B.
- 17. MIL-S-7720A.
- 18. NACE MR0175/ISO15156 (2003).
- 19. DIN 50049-3.1B (1986).
- 20. ENERGY SPEC. SS1 REV.3,

**Remark:**

- 1. SOLUTION ANNEALING TEMPERATURE AND TIME : 1900°F x30 MIN/INCH, WATER COOLED.
- 2. MATERIAL FREE FROM CONTINUOUS CARBIDE NETWORK.
- 3. MACRO/MICRO STRUCTURE : GOOD.
- 4. CORROSION TEST : PASSED PER ASTM A262 PRACTICE E.
- 5. MATERIAL FREE FROM KNOWN CONTACT WITH MERCURY & RADIUM.
- 6. MATERIAL FREE FROM WELDS OR WELD REPAIRS.
- 7. MELTING PROCESS : EAF+LHF+VOD.
- 8. HOT WORKING PROCESS :  $\Phi \geq 90\text{mm}$  FOR FORGED ;  $\Phi < 90\text{mm}$  FOR ROLLED.
- 9. NO PRODUCT THAT CONTAIN OR WERE MADE WITH ODC'S.
- 10. GRAIN SIZE NO. PER ASTM B112-88.,

This report is a copy of original mill certificate and verifies that the product meets the requirements as originally ordered by Energy Steel Products.

DATE: 4/24/07 VERIFIED BY:



ISO 9001:2000



Reg. No.: 028095

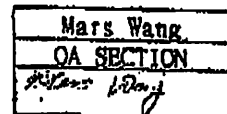


CERT. No. 02001

ISO 9001:2000+AS9100R



CERT. No. 0020363:1054231



Our quality and environment management systems have been certified by AS9100, ISO9001 QMS and 14001 EMS. We hereby certify that the material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.