



POHANG WORKS, 880 SONGDONG RI DAESONG MYEON NAM-GU,  
POHANG-SI, GYEONGSANGBUK-DO, KOREA, 790-841

Contract No. : I2005085136  
Order No. : LAC200507006

# MILL TEST CERTIFICATE

Commodity : CHANNEL

Customer : CCC STEEL, INC.

Certificate No. : D200509030021-9

Specification : ASTM A36/A572-50

Supplier : DONGKUK INTERNATIONAL, INC.

Date of issue : Sep 2, 2005

Dimensions	Quantity (B/D) (PCS)	Weight (lb)	Heat No.	Tensile test		Impact test		Bend test		Chemical Composition (%)											H U S e a t	Remarks										
				YP	TS	EL	YR	S	U	Energy (Joule)	SF	R=	180°	C	Si	Mn	P	S	S	Al			Cr	Ni	Cu	Mo	Nb	V	TI	Ceq	Pcm	
C 10 * 15.3 40ft	6 96	98.752	G97690D	T 1	52213	69618	22				L	9	16	109	20	19	3	5	8	27	15	Tr	19	Tr	32							
C 10 * 15.3 40ft	11 176	107.712	G97700D	T 1	50908	69183	22				L	11	16	114	20	19	1	5	7	24	15	Tr	19	Tr	34							
C 10 * 15.3 40ft	7 112	88.544	G97700D	T 1	50908	69183	22				L	11	16	114	20	19	1	5	7	24	15	Tr	19	Tr	34							
C 10 * 15.3 40ft	11 176	107.712	G97710D	T 1	52068	70053	23				L	11	16	111	18	17	4	4	6	29	13	Tr	20	Tr	33							
C 10 * 15.3 40ft	1 16	9.792	G97710D	T 1	52068	70053	23				L	11	16	111	18	17	4	4	6	29	13	Tr	20	Tr	33							
C 10 * 15.3 40ft	11 176	107.712	G97720D	T 1	53084	69763	23				L	9	15	107	18	16	1	5	7	33	15	Tr	18	Tr	31							

Tensile test : Direction-Longitudinal

Impact test : Direction-

Bend test : Direction-

Ceq = C+Mn/6+(Ni+Cu)/15+(Cr+Mo)/5

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER

When using the ordered product for other uses, rather than the above specification use, product damage and safety accidents may be caused.

- \* Position : T-Top, M-Middle, B-Bottom
- \* Division : L-Ladle analysis, C-Product analysis
- \* Sub(Sub size/Real value) : Space-Fill size, 1.7, 5\*10mm, 2.5\*0\*10mm
- \* GL (Gauge length, mm) : 1-200, 2-100, 3-90, 4-70, 5-50, 6-5.65\*A, 7-5d
- \* Heat (Heat treatment) : Space-As rolled, CR-Controlled rolled, TM-Thermo mechanical
- \* UST(Ultrasonic test) : C-Good, A-Acceptable
- \* SF Shear fracture : S.A.I. Slight A.I. Tr. Trace

*[Signature]*  
Sales Manager of quality assurance





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POHANG-SI, GYEONGSANGBUK-DO KOREA. 790-841

# MILL TEST CERTIFICATE

Contract No. : I2005085136  
 Order No. : LAC200507006  
 Commodity : CHANNEL  
 Specification : ASTM A36/A572-50

Customer : CCC STEEL, INC.  
 Supplier : DONGKUK INTERNATIONAL, INC.  
 Certificate No. : D200509030021-11  
 Date of issue : Sep 2, 2005

Dimensions	Quantity (B/D) (PCS)	Weight lb	Heat No.	Tensile test			Impact test			Chemical Composition (%)											H U S T	Remarks				
				YP	TS	EL	S	U	Energy	Notch	C	Si	Mn	P	S	SAI	Cr	Ni	Cu	Mo			Nb	V	TI	Caq
				psi	%	%	ft-lb	Joule	R=	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
C 10 * 15.3 40ft	1 16	9,792	G97750D	52503	69183	30																				
C 10 * 15.3 40ft	6 96	58,752	G97760D	52939	69618	26																				
C 10 * 15.3 40ft	11 176	107,712	G97770D	52358	69473	24																				
< Grand total >	539 6,120	4,414,368																								

Position : T-Top, M-Middle, B-Bottom  
 Division : L-Ladle analysis, C-Product analysis  
 Sub(Sub size, Real value) : Space-Full size, 1.7.5"10mm, 2.5.0"10mm  
 GL (Gauge length, mm) : 1-200, 2-100, 3-80, 4-70, 5-50, 6-5.65(A, 7-5d  
 Heat (Heat treatment) : Space-As rolled, CR-Controlled rolled,  
 TM-Thermo mechanical  
 US(T(Ultrasonic test) : G-Good, A-Acceptable \* Bend test : G-Good  
 SF -Shear fracture \* SAI : Spitable AI \* T- Trace

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER.

When using the ordered product for other uses, rather than the above specification use, product damage and safety accidents may be caused.

Tensile test : Direction-Longitudinal  
 Impact test : Direction-  
 Bend test : Direction-  
 Ceq = C+Mn/6+(Ni+Cu)/13+(Cr+Mo)/5

Surveyor to

General Manager of Quality Assurance Dept.