Contract No. : I2005085136

Order No. : LAC200507006

Commodity : CHANNEL

Specification : ASTM A36/A572-50

MILL TEST CERTIFICATE

DONGKUK STEEL

POHANG WORKS, 660 SONGDONG-RI DAESONG-MYEON NAM-GU, POHANG-SI,GYEONGSANGBUK-DO KOREA 790-841

Customer : CCC STEEL, INC.

Supplier : DONGKUK INTERNATIONAL,INC.

Certificate No. : D200509030021-9

Date of issue : Sep 2, 2005

Dimensions	Quantity (B/D) (PCS)	Weight lb	Heat No.	Position	Tensile test GL	YP psi	TS psi	EL %	YR %	Impact test Sub	Impact test ℃ Energy (Joule)	Impact test Notch SF (%)	Bend test : 180° R= t	Division	Chemical Composition (%) × 100 : 2 × 1000 : 3 C 2	Si 2	Mn 2	P 3	S 3	S.Al 3	Cr 2	Ni 2	Cu 2	Mo 3	Nb 3	V 3	Ti 3	Ceq 2	Pcm 2	Heat	UST	Remarks
C 10 * 15.3 40ft	6 96	58,752	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	50906	69183	22						L	11	16	114	20	19	1	5	7	24	15	Tr	19	Tr	34				
C 10 * 15.3 40ft	7 112	68,544	G97700D	T	1	50906	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+V)/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,Reaf 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
* UST(Ultrasonic test) : G-Good, A-Acceptable * Bend test : G-Good
* SF : Shear fracture * S.Al : Soluble Al * Tr : Trace

veyor to

Surveyor to :

Surveyor to :

Surveyor to :

General Manager of quality assurance team