

MILL TEST CERTIFICATE

Contract No.	
Customer	DUFERCO
L/C No.	
P/O No.	32201207CF02
Commodity	H-BEAM
Specification	ASTM A36/A572 G50/A992/ CSA350W

HYUNDAI STEEL	
Head Office	1, Songhyeon-dong, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20120901288 - 12
Class Cert. No.	
Date of Issue	2012-09-11

Dimensions & Length	Heat No.	Pieces Weights (kg)	Chemical Composition (%)											Tensile Test			Impact Test (V-notch)				Remarks (Impact Specimen Size)	
			C	Si	Mn	P	S	Cu Ni	Mo Cr	Al V	Nb	Sn	CE(1)	Tensile Strength	Yield point	Elongation(2)	Yield Ratio	AVG	1	2		3
			×100			×1000		×100		×1000			×100	N/mm ²		%		()	C			
21X8-1/4X62 40.00 FT	E 161478	17 19,125	18	13	62	30	19	22 8	1 9	2	12	11	32	509.9 514.8	385.4 382.5	26.5 25.5	0.76 0.74					
21X8-1/4X62 40.00 FT	E 161479	11 12,375	20	16	66	32	21	22 8	2 9	3	15	13	35	509.0 512.9	388.3 384.4	27.0 26.0	0.76 0.75					
21X8-1/4X68 40.00 FT	E 161475	32 39,488	18	14	62	30	17	25 8	2 10	2	12	13	33	518.8 522.7	384.4 382.5	25.0 25.5	0.74 0.73					
21X6-1/2X44 40.00 FT	E 161388	1 798	16	13	63	30	18	25 10	2 11	3	14	13	31	531.5 529.6	417.8 413.8	25.5 25.0	0.79 0.78					
21X6-1/2X44 40.00 FT	E 161390	25 19,950	17	11	66	35	19	23 9	1 16	2	12	13	34	533.5 531.5	411.9 408.0	25.0 25.5	0.77 0.77					
21X6-1/2X44 40.00 FT	E 161391	1 798	19	14	62	27	11	23 8	1 7	3	13	12	33	541.3 539.4	431.5 426.6	26.0 25.0	0.80 0.79					
21X6-1/2X44 40.00 FT	E 161393	1 798	18	14	62	32	12	24 10	2 11	2	9	12	33	519.8 525.6	393.2 397.2	25.0 24.5	0.76 0.76					
21X6-1/2X44 40.00 FT	E 162208	54 43,092	18	15	66	26	16	38 10	2 10	4	15	16	35	543.3 539.4	418.7 413.8	25.0 25.5	0.77 0.77					
21X6-1/2X44 40.00 FT	E 162209	4 3,192	18	12	62	24	16	33 8	1 8	3	14	17	33	549.2 543.3	439.3 436.4	24.0 25.0	0.80 0.80					
SUB TOTAL		146 139,616																				

(Note) (1) Ceq: (CE=C+Mn/6+Cr/5+V/50+Mo/5+Ni/15+Cu/15)

(2) Gauge length : 200 mm

(3) Yield Ratio = YP/TS

K. S. Shim

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

General Manager of Q.A Team