

# MILL TEST CERTIFICATE

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

<b>HYUNDAI STEEL</b>	
Head Office	1, Songhyeon-dong, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20120901288 - 6
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 <sup>(1)</sup>	Tensile Strength	Yield point	Elongation <sup>(2)</sup>	Yield Ratio	AVG	1	2		3
			×100			×1000		×100		×1000			×100	N/mm <sup>2</sup>		%		( )	C			
12X8X50 40.00 FT	E 162080	14 12,698	17	14	62	33	18	32 9	1	3	13	17	33	529.6 534.5	388.3 389.3	25.5 26.0	0.73 0.73					
14X5X22 40.00 FT	D 109738	75 29,925	20	16	62	27	9	22 9	2	3	15	11	35	544.3 540.3	404.0 402.1	27.0 26.5	0.74 0.74					
14X5X22 40.00 FT	D 109739	60 23,940	16	19	62	22	9	22 12	3	3	15	12	32	518.8 521.7	386.4 388.3	28.0 27.0	0.74 0.74					
14X5X26 40.00 FT	D 109733	10 4,720	16	18	101	32	11	30 9	2	4		19	39	549.2 543.3	418.7 416.8	26.0 25.0	0.76 0.77					
14X5X26 40.00 FT	D 109734	55 25,960	11	16	111	16	16	18 8	2	3		9	33	541.3 545.2	415.8 419.7	26.0 25.5	0.77 0.77					
14X8X43 40.00 FT	D 109211	11 8,580	10	18	116	31	18	24 13	3	10		17	35	545.2 541.3	401.1 397.2	24.5 25.0	0.74 0.73					
14X8X43 40.00 FT	D 109212	8 6,240	15	14	102	32	18	28 10	3	4	16	13	38	538.4 534.5	394.2 397.2	25.0 25.5	0.73 0.74					
14X8X43 40.00 FT	D 109895	64 49,920	16	14	61	31	14	26 9	1	3	20	12	31	528.6 521.7	394.2 392.3	26.5 27.0	0.75 0.75					
14X10X68 40.00 FT	E 158439	15 18,510	14	16	114	23	22	29 9	3	3	17	14	39	542.3 544.3	411.9 415.8	24.3 24.5	0.76 0.76					
SUB TOTAL		312 180,493																				

(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