

Contract No.	
Customer	DUFERCO
L/C No.	
P/O No.	32201207CF02
Commodity	H-BEAM
Specification	ASTM A36/A572 G50/A992/ CSA950W

## MILL TEST CERTIFICATE

<b>H HYUNDAI STEEL</b>	
Head Office	1, Songhyeon-dong, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20121000313 - 1
Class Cert. No.	
Date of issue	2012-10-05

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	Mo	Al	Nb	Sn	CE <sup>(1)</sup>	Tensile Strength	Yield point	Elongation <sup>(2)</sup>	Yield Ratio	AVG	1	2		3
			×100	×1000	×1000	×1000	×100	×1000	×1000	×1000	×100	×100	×100	N/mm <sup>2</sup>		%		( )				
12X8X40 40.00 FT	E 162082	2 1,452	17	14	62	34	13	30	2	3	12	13	32	535.4	422.7	25.0	0.79					
12X8X40 40.00 FT	E 162084	4 2,904	17	14	65	29	20	32	2	2	13	16	33	519.8	394.2	27.0	0.76					
12X8X40 40.00 FT	E 162094	1 726	19	13	64	20	15	31	2	3	13	14	35	524.7	398.1	26.0	0.76					
14X10X68 40.00 FT	E 162447	6 7,404	19	14	65	29	14	25	2	4	12	12	35	511.9	370.7	26.5	0.72					
14X10X74 40.00 FT	E 162444	16 21,472	17	12	58	20	15	22	2	3	9	11	31	509.9	372.7	26.0	0.73					
14X10X74 40.00 FT	E 162445	8 10,736	21	17	68	30	14	25	3	4	15	14	37	516.8	374.6	26.5	0.73					
16X7X50 40.00 FT	D 110328	96 87,072	17	15	60	23	14	23	1	1	16	16	31	509.9	363.8	26.5	0.71					
16X7X50 40.00 FT	E 162006	1 907	7	18	135	16	8	16	2	28	10	10	35	515.8	364.8	26.5	0.71					
21X12-1/4X101 40.00 FT	N 017625	9 16,488	18	16	67	31	16	21	2	3	14	12	34	529.6	419.7	25.0	0.79					
								5	7	79				531.5	426.6	24.3	0.80					
								8	11					545.2	397.2	25.5	0.73					
														541.3	394.2	25.0	0.73					
SUB TOTAL		143 149,161																				

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

(2) Gauge length: 200mm

(3) Yield Ratio = YP/TS

**K. S. Shim**  
General Manager of Q.A Team

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