

# 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 - 7
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				
14X10X68 40.00 FT	E 161298	9 11,106	18	16	60	29	15	26 9	1	3	12	13	33	545.2	421.7	24.5	0.77					
14X10X68 40.00 FT	E 161299	2 2,468	20	19	71	33	17	25 9	2	8	15	15	38	549.2	433.5	23.5	0.79					
16X5-1/2X26 40.00 FT	D 109706	45 21,240	16	19	63	26	15	25 10	3	3	18	13	32	509.9	372.7	28.0	0.73					
16X5-1/2X26 40.00 FT	D 109707	70 33,040	18	14	62	34	16	25 10	2	5	19	12	34	525.6	380.5	27.0	0.72					
16X5-1/2X31 40.00 FT	D 109700	75 42,150	16	16	65	27	8	24 11	2	3	16	11	32	542.3	394.2	26.5	0.73					
16X7X36 40.00 FT	E 161237	1 653	17	19	64	32	12	22 9	1	5	11	13	32	527.6	409.9	26.5	0.78					
16X7X36 40.00 FT	E 162109	4 2,612	18	17	61	32	19	25 7	2	3	14	12	32	536.4	423.6	26.5	0.79					
16X7X36 40.00 FT	E 162110	99 64,647	18	19	63	35	14	30 9	2	3	13	14	33	539.4	433.5	24.0	0.80					
16X7X36 40.00 FT	E 162111	45 29,385	17	18	62	32	20	30 8	2	3	10	14	33	549.2	437.4	25.0	0.80					
SUB TOTAL		350 207,301																				

(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**  
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