

# 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 - 3
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				
12X4X22 40.00 FT	D 109750	60 23,940	18	15	63	26	21	28 13	2	14	2	15	14	34	536.4 531.5	407.0 404.0	25.0 25.5	0.76 0.76					
12X6-1/2X26 40.00 FT	D 109558	16 7,552	15	15	62	26	18	26 10	2	8	3	16	13	30	518.8 512.9	384.4 380.5	26.0 26.5	0.74 0.74					
12X6-1/2X26 40.00 FT	D 109560	13 6,136	17	16	61	31	19	23 9	1	12	2	19	12	32	540.3 534.5	411.9 408.0	24.5 25.0	0.76 0.76					
12X6-1/2X26 40.00 FT	D 109561	147 69,384	16	17	60	27	14	26 9	2	12	3	16	24	31	536.4 530.5	387.4 383.4	25.0 25.5	0.72 0.72					
12X6-1/2X26 40.00 FT	D 109562	136 64,192	17	16	61	25	20	26 10	2	12	3	19	15	32	524.7 527.6	377.6 380.5	25.0 24.5	0.72 0.72					
12X6-1/2X26 40.00 FT	D 109563	32 15,104	20	17	60	32	14	24 9	2	15	3	19	14	36	544.3 541.3	406.0 403.1	24.5 25.0	0.75 0.74					
12X6-1/2X30 40.00 FT	D 109555	72 39,168	19	16	61	33	23	24 9	1	13	3	16	14	34	539.4 534.5	401.1 395.2	24.5 25.0	0.74 0.74					
12X6-1/2X30 40.00 FT	D 109556	30 16,320	17	16	61	29	19	22 8	1	12	63	17	12	32	531.5 527.6	393.2 389.3	25.5 26.0	0.74 0.74					
12X6-1/2X30 40.00 FT	D 109557	96 52,224	19	15	59	30	20	21 9	1	12	3	17	12	33	543.3 540.3	397.2 394.2	25.0 25.5	0.73 0.73					
SUB TOTAL		602 294,020																					

(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

<p><b>K.S. Shim</b></p> <p>General Manager of Q.A Team</p>	<p>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</p>
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