

MILL TEST CERTIFICATE

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

H HYUNDAI STEEL	
Head Office	1, Songhyeon-dong, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20120901288 - 4
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		%		(^o)	C				
12X6-1/2X30 40.00 FT	D 109558	42 22,848	15	15	62	26	18	26 10	2	8	3	16	13	30	517.8 512.9	393.2 387.4	26.5 27.0	0.76 0.76					
18X7-1/2X50 40.00 FT	E 161211	12 10,884	17	17	61	25	17	25 15	3 11	2	10	12	33	542.3 548.2	427.6 430.5	24.5 24.0	0.79 0.78						
18X7-1/2X50 40.00 FT	E 161212	9 8,163	19	17	62	33	17	26 9	2 12	2	13	14	34	538.4 530.5	420.7 414.8	25.5 26.0	0.78 0.78						
18X7-1/2X50 40.00 FT	E 161748	61 55,327	21	14	68	33	19	25 10	2 15	2 3	12	13	38	547.2 543.3	421.7 416.8	26.0 25.5	0.77 0.77						
18X7-1/2X50 40.00 FT	E 161749	14 12,698	17	13	62	34	20	24 10	2 17	2 3	11	12	33	536.4 534.5	402.1 396.2	27.0 26.5	0.75 0.74						
18X7-1/2X60 40.00 FT	E 161723	4 4,356	20	14	60	27	15	23 9	2 10	2 4	16	14	35	529.6 525.6	404.0 402.1	24.0 23.5	0.76 0.76						
18X7-1/2X60 40.00 FT	E 161724	10 10,890	20	16	68	32	12	24 9	2 10	4	16	16	36	538.4 541.3	411.9 416.8	24.0 24.5	0.76 0.77						
18X7-1/2X60 40.00 FT	E 161746	29 31,581	19	13	61	30	20	25 9	2 9	2	11	13	34	525.6 531.5	382.5 388.3	25.0 25.5	0.73 0.73						
18X7-1/2X60 40.00 FT	E 161747	37 40,293	18	14	62	25	20	21 9	2 11	3	12	11	33	523.7 528.6	393.2 397.2	26.0 25.5	0.75 0.75						
SUB TOTAL		218 197,040																					

(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