

Contract No.	
Customer	DUFERCO
L/C No.	
P/O No.	32201411C321
Commodity	H-BEAM
Specification	ASTM A572 G50/A992/ CSA 350W

## MILL TEST CERTIFICATE



Head Office	63, Jungbong-daero, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20141103208 - 2
Class Cert. No.	
Date of Issue	2014-11-17

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 <sup>2</sup>		%		( )	C			
18X7-1/2X60 40.00 FT	E 178216	20 21,780	15	13	53	12	10	22 8	2 9	4 12	5	10	28	523 520	418 416	25.5 26.0	0.80 0.80					
18X7-1/2X60 40.00 FT	E 178217	17 18,513	17	13	57	14	10	26 9	2 11	5 13	6	11	32	477 481	374 375	28.5 28.0	0.78 0.78					
18X7-1/2X60 40.00 FT	E 178584	2 2,178	18	17	51	21	10	29 10	3 10	2 10	3	13	32	521 517	390 387	25.0 25.5	0.75 0.75					
18X7-1/2X71 40.00 FT	E 177702	1 1,289	19	15	65	24	7	28 8	2 11	4 17	5	12	35	559 553	438 435	24.5 25.0	0.78 0.79					
18X7-1/2X71 40.00 FT	E 178215	40 51,560	16	15	53	11	7	24 8	2 10	8 13	6	10	30	498 501	378 380	26.0 25.5	0.76 0.76					
12X12X65 40.00 FT	E 177886	26 30,654	17	16	51	29	10	29 9	2 11	6 13	5	13	31	509 513	405 402	26.0 25.0	0.80 0.79					
12X12X65 40.00 FT	E 177887	1 1,179	16	14	51	31	7	26 10	4 12	6 13	4	11	30	505 507	401 406	26.5 26.0	0.79 0.80					
12X12X79 40.00 FT	E 177882	5 7,170	16	14	56	29	6	24 10	3 14	5 14	5	10	31	512 514	396 397	25.5 25.0	0.77 0.77					
12X12X79 40.00 FT	E 177883	16 22,944	16	15	52	23	7	21 8	2 9	5 12	4	10	29	504 505	390 387	26.0 26.5	0.77 0.77					
SUB TOTAL		128 157,267																				

(Note) (1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15) (2) Gauge length : 200 mm (3) Yield Ratio = YP/TS

**J. C. Ahn**  
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