

MILL TEST CERTIFICATE



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

Head Office	1, Songhyeon-dong, Dong-gu, Incheon, 401-712, S. Korea
Certificate No.	IH20120901288 - 9
Class Cert. No.	
Date of Issue	2012-09-11

Dimensions & Length	Heat No.	Pieces Weights (kg)	Chemical Composition (%)											Tensile Test			Yield Ratio	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⁾		AVG	1	2	3	
			×100			×1000		×100		×1000			×100	N/mm ²		%		(^o)	C			
18X6X40 40.00 FT	E 161769	28 20,328	20	17	62	34	14	25 9	2 11	4	15	15	35	536.4 533.5	405.0 400.1	25.5 26.0	0.76 0.75					
18X6X40 40.00 FT	E 161770	43 31,218	18	13	59	28	5	21 8	2 10	3	11	12	32	508.0 505.0	365.8 367.7	27.5 27.0	0.72 0.73					
18X6X46 40.00 FT	E 161321	2 1,670	19	17	68	26	12	19 9	1 9	3	14	13	34	526.6 529.6	396.2 400.1	25.0 25.0	0.75 0.76					
18X6X46 40.00 FT	E 161753	2 1,670	17	14	96	22	9	27 10	3 14	3	12	12	39	534.5 529.6	394.2 390.3	26.0 26.5	0.74 0.74					
18X6X46 40.00 FT	E 161754	38 31,730	17	16	94	22	10	22 10	3 9	3	14	12	37	540.3 536.4	416.8 411.9	26.0 26.0	0.77 0.77					
18X6X46 40.00 FT	E 161755	8 6,680	20	14	62	22	7	24 9	2 10	3	12	13	35	547.2 543.3	412.9 409.9	25.5 25.5	0.75 0.76					
18X11X76 40.00 FT	N 016315	3 4,137	18	17	77	31	12	25 7	1 17	10	19	12	37	541.3 537.4	404.0 400.1	25.0 25.5	0.75 0.74					
18X11X76 40.00 FT	N 016334	4 5,516	16	17	104	28	17	23 7	2 8	4	23	11	37	530.5 534.5	395.2 399.1	26.0 25.0	0.74 0.75					
18X11X76 40.00 FT	N 017052	3 4,137	18	16	67	28	15	21 7	1 10	2	13	12	33	537.4 533.5	406.0 402.1	25.5 26.0	0.76 0.75					
SUB TOTAL		131 107,086																				

(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