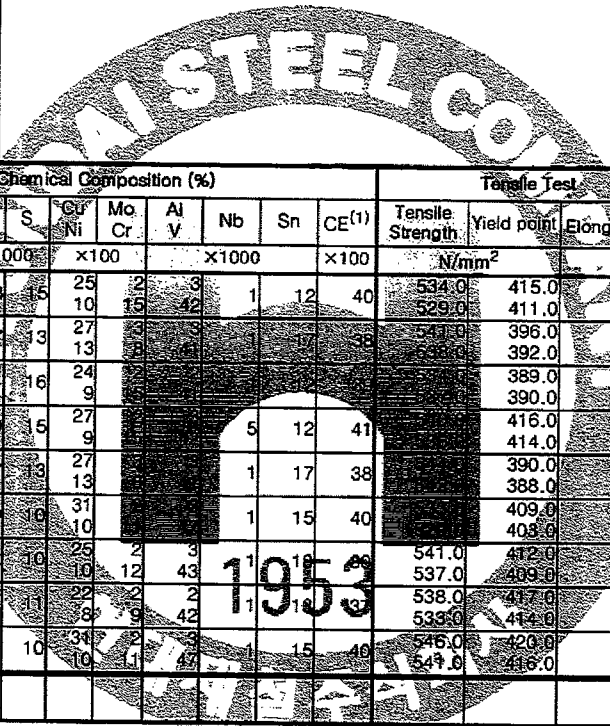


MILL TEST CERTIFICATES



Contract No.	
Customer	COUTINHO&FERROSTAAL
L/C No.	
P/O No.	32201207CV02
Commodity	H-BEAM
Specification	ASTM A36/A572 G50/A992/ CSA350W

Head Office	444, Songnae-dong, Nam-gu, Pohang, S. Korea
Certificate No.	IH20120800845 - 2
Class Cert. No.	
Date of Issue	2012-08-07



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	Mo	Al	Nb	Sn	CE(1)	Tensile Strength	Yield point	Elongation(2)	Yield Ratio	AVG	1	2		3	
			x100			x1000		x100		x1000			x100		N/mm ²		%		()	C			
33X11-1/2X130 40.00 FT	3D1913	1 2,359	18	14	96	28	15	25	10	2	15	3	1	12	40	534.0	415.0	26.6	0.78				
33X11-1/2X141 40.00 FT	3D1909	7 17,906	17	15	96	17	13	27	13	3	15	3	1	12	36	541.0	396.0	25.8	0.73				
33X11-1/2X141 40.00 FT	3D1910	5 12,790	17	15	96	24	16	24	9	3	15	3	1	12	36	389.0	390.0	26.8	0.73				
33X11-1/2X152 40.00 FT	3C9514	2 5,516	19	15	96	29	15	27	9	3	15	3	5	12	41	416.0	390.0	28.2	0.77				
33X11-1/2X152 40.00 FT	3D1909	2 5,516	17	15	96	17	13	27	13	3	15	3	1	17	38	414.0	390.0	28.5	0.77				
36X12X135 40.00 FT	3D1664	2 4,898	18	16	98	29	10	31	10	3	15	3	1	15	40	409.0	403.0	26.4	0.77				
36X12X135 40.00 FT	3D1666	25 61,225	18	15	97	32	10	25	10	2	12	3	1	18	39	541.0	412.0	25.5	0.76				
36X12X135 40.00 FT	3D1667	26 63,674	17	14	97	19	11	22	11	2	12	2	1	18	33	537.0	409.0	26.3	0.76				
36X12X150 40.00 FT	3D1664	9 24,489	18	16	98	29	10	34	10	3	15	3	1	15	46	538.0	417.0	24.9	0.78				
SUB TOTAL		79 198,373														539.0	414.0	25.6	0.78				
																546.0	420.0	24.1	0.77				
																549.6	416.0	24.8	0.77				

(Note) (1) Ceq: (CE=C+Mn/6+Cr/5+V/50+Mo/5+Ni/15+Cu/15) (2) Gauge length: 200mm (3) Yield Ratio = YP/TS

Conditions of supply : As Rolled

of ms
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