



# MAANSHAN IRON AND STEEL CO., LTD.

Customer: TEWOO METAL (H.K.) LTD.

Commodity: NEWLY HOT ROLLED STEEL H-BEAMS

Specification: ASTM A616M-13 ASTM A572/A572M-2012

ASTM A992/A992M-2011(ε:0.0008%~0.0040%)

## CERTIFICATE OF PRODUCT QUALITY

ADD: NO.8 JIUHUA WEST ROAD, MAANSHAN CITY, ANHUI PROVINCE, P.R.CHINA  
POSTCODE: 243000 TEL: (0555)2877326  
QUALITY DEPARTMENT: BILU YU  
TEL: (0555)2877321



QUALITY NO.: QSR8132703406

LOT No.	HEAT No.	STEEL GRADE	Size (INCH)	Length (M)	Pieces	Theoretical Weight (MT)	Chemical Composition (%)											Mechanical Properties					
							C	Si	Mn	P	S	Cr	Ni	Cu	V	Mo	Nb	B	Sn	CEV	Yield Strength $\sigma_s$ (Mpa)	Tensile Strength $\sigma_b$ (Mpa)	Elongation $\delta_{200}$ (%)
217020520	17101105	MC345B	W10*12	12.192	114	24.852	0.16	0.22	0.97	0.027	0.017	0.03	0.01	0.02	0.017	0.004	0.002	0.0017	0.35	408	538	25.0	0.76
217020521	16208064	MC345B	W10*12	12.192	41	8.938	0.17	0.21	0.89	0.033	0.019	0.05	0.01	0.01	0.018	0.002	0.0022	0.33	423	538	28.0	0.79	
217020545	17201023	MC345B	W10*15	12.192	95	25.84	0.15	0.21	1.11	0.027	0.030	0.03	0.01	0.02	0.017	0.004	0.001	0.0014	0.35	376	534	34.0	0.70
217020546	17301002	MC345B	W10*17	12.192	56	17.248	0.17	0.22	1.25	0.021	0.022	0.03	0.01	0.02	0.021	0.003	0.001	0.0018	0.39	409	537	33.0	0.76
217020547	17301002	MC345B	W10*17	12.192	50	15.4	0.17	0.22	1.25	0.021	0.022	0.03	0.01	0.02	0.021	0.003	0.001	0.0018	0.39	407	539	33.5	0.76
217020363	17101101	MC345B	W10*22	12.192	18	7.182	0.17	0.19	1.21	0.023	0.014	0.04	0.01	0.01	0.021	0.002	0.001	0.0019	0.39	446	595	34.5	0.75
217020364	17201019	MC345B	W10*22	12.192	38	15.162	0.18	0.22	1.31	0.033	0.027	0.03	0.01	0.02	0.046	0.003	0.001	0.0018	0.42	430	596	33.5	0.72
217020367	17101101	MC345B	W10*26	12.192	64	30.016	0.17	0.19	1.21	0.023	0.014	0.04	0.01	0.01	0.021	0.002	0.001	0.0019	0.39	373	535	33.0	0.70
217020368	17101101	MC345B	W10*26	12.192	54	25.326	0.17	0.19	1.21	0.023	0.014	0.04	0.01	0.01	0.021	0.002	0.001	0.0019	0.39	376	543	31.5	0.70
217020369	17101102	MC345B	W10*26	12.192	71	33.299	0.19	0.23	1.34	0.031	0.016	0.04	0.01	0.02	0.022	0.003	0.001	0.0020	0.43	395	612	33.0	0.64
217020370	17101102	MC345B	W10*26	12.192	8	3.752	0.19	0.23	1.34	0.031	0.016	0.04	0.01	0.02	0.022	0.003	0.001	0.0020	0.43	381	597	34.0	0.64
217020384	17201018	MC345B	W10*30	12.192	60	32.76	0.17	0.25	1.24	0.033	0.019	0.03	0.01	0.02	0.043	0.002	0.001	0.0016	0.39	431	578	32.0	0.75
217020385	17201018	MC345B	W10*30	12.192	55	30.03	0.17	0.25	1.24	0.033	0.019	0.03	0.01	0.02	0.043	0.002	0.001	0.0016	0.39	398	541	31.5	0.74
217020386	17300998	MC345B	W10*30	12.192	40	21.84	0.16	0.23	1.29	0.024	0.014	0.03	0.01	0.02	0.045	0.004	0.002	0.0016	0.39	391	536	34.5	0.73
217020040	17400863	MC345B	W12*26	12.192	30	14.16	0.18	0.21	1.22	0.023	0.023	0.02	0.01	0.02	0.025	0.004	0.003	0.0024	0.40	358	519	37.0	0.69
217020041	17300697	MC345B	W12*26	12.192	70	33.04	0.16	0.27	1.26	0.025	0.023	0.02	0.01	0.01	0.021	0.002	0.003	0.0026	0.38	353	511	37.0	0.69
217020042	17300697	MC345B	W12*26	12.192	50	23.6	0.16	0.27	1.26	0.025	0.023	0.02	0.01	0.01	0.021	0.002	0.003	0.0026	0.38	370	512	37.0	0.72
217020043	17100852	MC345B	W12*26	12.192	59	27.848	0.16	0.29	1.31	0.024	0.019	0.02	0.01	0.01	0.024	0.003	0.003	0.0027	0.39	353	510	38.5	0.69
217020044	17100852	MC345B	W12*26	12.192	10	4.72	0.16	0.29	1.31	0.024	0.019	0.02	0.01	0.01	0.024	0.003	0.003	0.0027	0.39	368	513	36.0	0.72
217020048	17300699	MC345B	W12*30	12.192	39	21.177	0.16	0.25	1.27	0.028	0.012	0.03	0.01	0.01	0.022	0.003	0.003	0.0020	0.38	357	508	26.5	0.70
217020049	17300699	MC345B	W12*30	12.192	40	21.72	0.16	0.25	1.27	0.028	0.012	0.03	0.01	0.01	0.022	0.003	0.003	0.0020	0.38	359	514	33.5	0.70
217020050	17100854	MC345B	W12*30	12.192	60	32.58	0.17	0.28	1.22	0.019	0.017	0.02	0.01	0.01	0.020	0.002	0.002	0.0025	0.38	357	512	36.0	0.70
217020051	17100854	MC345B	W12*30	12.192	60	32.58	0.17	0.28	1.22	0.019	0.017	0.02	0.01	0.01	0.020	0.002	0.002	0.0025	0.38	358	520	34.0	0.69



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## CERTIFICATE OF PRODUCT QUALITY

CERTIFICATE NO.: QSR8132703406

MAANSHAN IRON & STEEL CO., LTD.  
SPECIALIZED FOR QUALITY INSPECTION

DATE: 2017-4-6

LOT No.	HEAT No.	STEEL GRADE	Size (INCH)	Length (M)	Pieces	Theoretical Weight (MT)	Chemical Composition (%)											Mechanical Properties						
							C	Si	Mn	P	S	Cr	Ni	Cu	V	Mo	Nb	B	Sn	CEV	Yield Strength $\sigma_s$ (Mpa)	Tensile Strength $\sigma_b$ (Mpa)	Elongation $\delta_{200}$ (%)	Yield Ratio
217020072	17300701	MC345B	W12*35	12.192	40	25.36	0.15	0.27	1.28	0.028	0.016	0.03	0.02	0.03	0.048	0.002	0.003	0.0024		0.38	400	531	35.5	0.75
217020073	17300701	MC345B	W12*35	12.192	46	29.164	0.15	0.27	1.28	0.028	0.016	0.03	0.02	0.03	0.048	0.002	0.003	0.0024		0.38	411	544	37.5	0.76
217020074	17100856	MC345B	W12*35	12.192	40	25.36	0.17	0.24	1.30	0.031	0.018	0.03	0.01	0.02	0.047	0.003	0.003	0.0022		0.40	405	530	34.0	0.76
217020075	17100856	MC345B	W12*35	12.192	29	18.386	0.17	0.24	1.30	0.031	0.018	0.03	0.01	0.02	0.047	0.003	0.003	0.0022		0.40	400	526	36.5	0.76
117020412	17400946	MC345B	W12*65	12.192	24	28.392	0.17	0.28	1.26	0.023	0.018	0.03	0.01	0.01	0.022	0.002	0.002	0.0024		0.39	385	514	23.0	0.75
117020413	17400946	MC345B	W12*65	12.192	7	8.281	0.17	0.28	1.26	0.023	0.018	0.03	0.01	0.01	0.022	0.002	0.002	0.0024		0.39	385	511	22.5	0.75
117020414	17100894	MC345B	W12*65	12.192	8	9.464	0.18	0.28	1.28	0.025	0.014	0.02	0.01	0.01	0.023	0.002	0.002	0.0026		0.40	383	525	24.0	0.73
117020398	17400946	MC345B	W12*79	12.192	16	22.816	0.17	0.28	1.26	0.023	0.018	0.03	0.01	0.01	0.022	0.002	0.002	0.0024		0.39	383	516	23.5	0.74
117020399	17200800	MC345B	W12*79	12.192	8	11.408	0.16	0.29	1.28	0.028	0.019	0.04	0.01	0.02	0.023	0.003	0.003	0.0015		0.39	383	513	23.0	0.75
217030372	17201863	MC345B	W14*30	12.192	9	4.896	0.17	0.24	1.32	0.027	0.015	0.04	0.01	0.01	0.022	0.002	0.003	0.0014		0.40	362	498	33.5	0.73
217030373	17201863	MC345B	W14*30	12.192	21	11.424	0.17	0.24	1.32	0.027	0.015	0.04	0.01	0.01	0.022	0.002	0.003	0.0014		0.40	349	487	33.5	0.72
217030374	17201864	MC345B	W14*30	12.192	60	32.64	0.17	0.21	1.22	0.026	0.013	0.04	0.01	0.01	0.020	0.002	0.002	0.0011		0.39	356	510	32.0	0.70
217030375	17201864	MC345B	W14*30	12.192	57	31.008	0.17	0.21	1.22	0.026	0.013	0.04	0.01	0.01	0.020	0.002	0.002	0.0011		0.39	357	506	35.0	0.71
217030376	17401354	MC345B	W14*30	12.192	57	31.008	0.15	0.32	1.35	0.033	0.020	0.04	0.01	0.01	0.022	0.004	0.005	0.0026		0.39	365	529	34.5	0.69
217030377	17401354	MC345B	W14*30	12.192	61	33.184	0.15	0.32	1.35	0.033	0.020	0.04	0.01	0.01	0.022	0.004	0.005	0.0026		0.39	366	517	33.5	0.71
217030378	17301450	MC345B	W14*30	12.192	15	8.16	0.17	0.17	1.21	0.023	0.030	0.02	0.01	0.02	0.045	0.008	0.004	0.0022		0.39	403	553	32.5	0.73
217030402	17201874	MC345B	W14*34	12.192	3	1.866	0.16	0.22	1.26	0.029	0.014	0.05	0.01	0.02	0.048	0.003	0.002	0.0012		0.39	390	577	31.0	0.68
217030403	17201874	MC345B	W14*34	12.192	14	8.708	0.16	0.22	1.26	0.029	0.014	0.05	0.01	0.02	0.048	0.003	0.002	0.0012		0.39	405	546	34.5	0.74
217030404	17301449	MC345B	W14*34	12.192	8	4.976	0.17	0.19	1.23	0.022	0.026	0.02	0.01	0.01	0.044	0.001	0.003	0.0024		0.39	408	553	32.5	0.74
217030412	17101879	MC345B	W14*38	12.192	28	19.796	0.17	0.23	1.33	0.029	0.013	0.04	0.01	0.02	0.048	0.004	0.003	0.0014		0.41	385	524	36.5	0.73
217030413	17201872	MC345B	W14*38	12.192	47	33.229	0.19	0.22	1.26	0.027	0.018	0.04	0.01	0.01	0.046	0.004	0.003	0.0014		0.42	400	542	35.5	0.74
217030414	17201872	MC345B	W14*38	12.192	15	10.605	0.19	0.22	1.26	0.027	0.018	0.04	0.01	0.01	0.046	0.004	0.003	0.0014		0.42	398	557	31.0	0.71
117030401	17201859	MC345B	W14*48	12.192	8	7.024	0.15	0.20	1.26	0.025	0.017	0.06	0.01	0.01	0.020	0.003	0.002	0.0012		0.38	347	506	25.5	0.69



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LOT No.	HEAT No.	STEEL GRADE	Size (INCH)	Length (M)	Pieces	Theoretical Weight (MT)	Chemical Composition (%)											Mechanical Properties						
							C	Si	Mn	P	S	Cr	Ni	Cu	V	Mo	Nb	B	Sn	CEV	Yield Strength $\sigma_s$ (Mpa)	Tensile Strength $\sigma_b$ (Mpa)	Elongation $\delta_{200}$ (%)	Yield Ratio
117030402	17301899	MC345B	W14*48	12.192	4	3.512	0.17	0.21	1.27	0.024	0.016	0.04	0.01	0.01	0.023	0.003	0.0013			0.40	371	496	26.0	0.65
117030405	17201860	MC345B	W14*48	12.192	18	15.804	0.16	0.22	1.29	0.022	0.019	0.04	0.01	0.01	0.020	0.002	0.0014			0.39	351	494	25.5	0.71
117030357	17201859	MC345B	W14*53	12.192	24	23.112	0.15	0.20	1.26	0.025	0.017	0.06	0.01	0.01	0.020	0.003	0.0012			0.38	378	493	24.0	0.77
117030341	17301801	MC345B	W14*74	12.192	20	26.82	0.18	0.28	1.27	0.024	0.018	0.03	0.01	0.02	0.023	0.003	0.0015			0.40	370	513	21.0	0.72
117030342	17301801	MC345B	W14*74	12.192	13	17.433	0.18	0.28	1.27	0.024	0.018	0.03	0.01	0.02	0.023	0.003	0.0015			0.40	373	515	21.5	0.72
117030343	17401735	MC345B	W14*74	12.192	7	9.387	0.16	0.28	1.27	0.026	0.021	0.03	0.01	0.02	0.022	0.002	0.0024			0.38	382	522	22.5	0.73
117030301	17201773	MC345B	W14*90	12.192	24	39.216	0.16	0.30	1.27	0.021	0.016	0.04	0.01	0.02	0.023	0.003	0.0016			0.39	379	528	24.0	0.72
117030302	17201773	MC345B	W14*90	12.192	16	26.144	0.16	0.30	1.27	0.021	0.016	0.04	0.01	0.02	0.023	0.003	0.0016			0.39	375	527	24.5	0.71
117020834	17300937	MC345B	W18*119	12.192	12	25.896	0.18	0.28	1.21	0.017	0.009	0.03	0.01	0.01	0.035	0.002	0.0024			0.40	371	520	24.5	0.71
117020835	17300937	MC345B	W18*119	12.192	11	23.738	0.18	0.28	1.21	0.017	0.009	0.03	0.01	0.01	0.035	0.002	0.0024			0.40	372	524	24.5	0.71
217020397	17101105	MC345B	W8*10	12.192	7	1.281	0.18	0.22	0.97	0.027	0.017	0.03	0.01	0.02	0.017	0.004	0.0017			0.35	425	570	30.0	0.75
217020398	17201024	MC345B	W8*10	12.192	112	20.496	0.2	0.22	1.12	0.031	0.020	0.04	0.01	0.02	0.018	0.004	0.0017			0.40	441	571	31.0	0.77
217020399	17201024	MC345B	W8*10	12.192	136	24.888	0.2	0.22	1.12	0.031	0.020	0.04	0.01	0.02	0.018	0.004	0.0017			0.40	440	571	25.0	0.77
217020407	17101105	MC345B	W8*10	12.192	60	10.98	0.18	0.22	0.97	0.027	0.017	0.03	0.01	0.02	0.017	0.004	0.0017			0.35	388	536	33.5	0.72
217020396	17201022	MC345B	W8*13	12.192	97	22.795	0.16	0.20	1.25	0.035	0.031	0.03	0.01	0.02	0.020	0.005	0.0013			0.38	445	560	30.0	0.79
217030004	17201431	MC345B	W8*40	12.192	46	33.074	0.17	0.22	1.27	0.026	0.027	0.02	0.01	0.02	0.045	0.003	0.0026			0.40	402	540	34.0	0.74
<b>TOTAL:</b>					<b>2410</b>	<b>1244.801</b>																		

EXPLAINS: 1. THE DUPLICATE SHOULD NOT BE EQUALLY AUTHENTIC AS THE ORIGINAL INSPECTION CERTIFICATE

2. THE STEEL GRADE IS SUBJECT TO THE INSPECTION CERTIFICATE'S

0.0040% >= B >= 0.0008%, OTHERS ACCO. TO ASTM A572 GR50/A572M-2012,

A992/A992M-2011, ASTM A6/A6M-2009

Consignor:

Quality Control  
center Auditor: