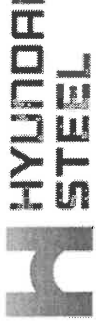


Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50MM(G45MM) PARA MATERIAL DE VIGA

INSPECTION CERTIFICATE

EN 10204(2004) TYPE 3.1

		PAGE: [1 / 6]
		Factory
Certificate No.	IH20170203796-1	
Class certificate No.		
Issue date	2017-02-22	

Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition													Tensile Test			Yield Ratio(%)	BEND TEST	Impact Test(L)			Remarks (Impact Specimen Size)										
					x100			x1000			x1000			x100			Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation (%)	V-Notch																
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al	V	Nb				Sn			Ce(%)	AVG	1		2	3								
14X10X68	40.00 FT	E 194749	1	1,234	19	18	95	22	7	28	8	1	14	4	14	1	14	1	17	41	564	398	24.5	0.71	-	-	-	-	-	-	-	-	-	-	-	
14X10X68	40.00 FT	E 194750	7	8,638	18	20	100	26	6	28	9	2	19	5	14	3	14	3	14	42	559	394	25.0	0.70	-	-	-	-	-	-	-	-	-	-	-	
14X10X68	40.00 FT	E 194751	8	9,872	18	16	96	22	4	26	9	1	14	5	14	2	12	12	40	549	400	26.0	0.73	-	-	-	-	-	-	-	-	-	-	-	-	
14X10X68	40.00 FT	E 194752	1	1,234	18	18	98	23	7	30	9	2	16	4	14	2	16	41	40	560	403	25.5	0.72	-	-	-	-	-	-	-	-	-	-	-	-	
18X11X86	40.00 FT	N 036070	21	32,781	18	14	95	25	9	28	8	2	16	3	13	1	16	40	40	556	396	26.5	0.71	-	-	-	-	-	-	-	-	-	-	-	-	
18X11X106	40.00 FT	N 036071	7	13,461	18	15	97	22	11	29	8	2	13	3	13	1	17	40	40	554	390	26.0	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-
18X11X106	40.00 FT	N 036072	2	3,846	19	16	96	25	10	28	9	2	11	3	13	1	12	40	40	546	385	25.5	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-
21X8-1/4X62	40.00 FT	E 195097	28	31,500	19	15	94	24	10	30	9	3	14	2	14	1	15	41	41	549	387	25.0	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-
21X8-1/4X62	40.00 FT	E 195098	1	1,125	18	22	99	33	5	29	9	2	21	4	14	1	17	42	42	560	386	25.5	0.69	-	-	-	-	-	-	-	-	-	-	-	-	-
21X8-1/4X68	40.00 FT	E 195095	6	7,404	20	16	97	29	9	27	9	2	19	13	15	2	22	43	43	551	379	25.0	0.69	-	-	-	-	-	-	-	-	-	-	-	-	-
SUB TOTAL			82	111,095																																

===== NEXT =====

Note
 (1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)
 (2) Gauge length : 200 mm
 (3) YR = Y.S/T.S

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.	
J. C. Ahn	
General Manager of Q.A Team	

Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50MM(345MM) PARA MATERIAL DE VIGA

INSPECTION CERTIFICATE

EN 10204(2004) TYPE 3.1

HYUNDAI STEEL	
Factory	63, Jungbong-Daero, Dong-gu, Incheon, S. Korea
Certificate No.	IH20170203796-2
Class certificate No.	
Issue date	2017-02-22
PAGE: 1 / 6	

Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition													Tensile Test		BEND TEST	Impact Test(L)			Remarks (Impact Specimen Size)			
					x100					x1000					x100			Yield Ratio ^(b)	Elongation ^(g) %		V-Notch	°C					
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al	V	Nb	Sn			CE _{tot}		Tensile Strength	Yield Strength	AVG	1	2	3
21X8-1/4X68	40.00 FT	E 195096	34	41,956	18	14	94	26	9	30	10	2	15	4	14	1	15	40	555	380	26.5	0.68					
21X8-1/4X73	40.00 FT	E 194442	3	3,972	18	15	96	30	9	23	7	2	14	3	14	1	10	39	559	374	25.5	0.67					
21X8-1/4X73	40.00 FT	E 195094	17	22,508	19	16	96	27	10	25	9	2	15	3	15	1	21	41	542	395	25.5	0.73					
21X12-1/4X101	40.00 FT	N 035745	3	5,496	18	16	96	21	6	27	8	1	13	4	15	4	13	39	537	394	26.5	0.73					
21X12-1/4X101	40.00 FT	N 035746	13	23,816	20	16	93	20	7	27	10	2	14	3	13	1	10	41	559	390	24.5	0.70					
21X12-1/4X122	40.00 FT	N 035744	11	24,343	18	15	96	22	4	26	8	1	14	3	14	2	11	40	556	384	25.0	0.69					
21X12-1/4X122	40.00 FT	N 035745	3	6,639	18	16	96	21	6	27	8	1	13	4	15	4	13	39	552	390	25.5	0.71					
24X9X68	40.00 FT	N 035775	15	18,510	18	17	66	26	8	30	8	2	11	4	14	2	15	34	549	385	26.0	0.70					
24X9X68	40.00 FT	N 035776	6	7,404	18	14	64	24	10	25	8	1	10	2	14	2	11	33	570	399	26.0	0.70					
24X9X68	40.00 FT	N 035777	24	29,616	18	16	63	24	8	25	7	1	10	6	13	2	13	33	566	396	27.0	0.70					
SUB TOTAL			129	184,260																							

===== NEXT =====

Note
 (1) Ceq: (C=Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)
 (2) Gauge length : 200 mm
 (3) Y.R = Y.S/T.S

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.	
J. C. Ahn	General Manager of QA Team

HYUNDAI STEEL		PAGE: [3 / 6]
Factory	63, Jungbong-Daero, Dong-gu, Incheon, S. Korea	
Certificate No.	IH20170203796-3	
Class certificate No.		
Issue date	2017-02-22	

INSPECTION CERTIFICATE

EN 10204(2004) TYPE 3.1

Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50WM(345WM) PARA MATERIAL DE VIGA

Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition														Tensile Test	Yield Ratio(%)	BEND TEST	Impact Test(L)			Remarks (Impact Specimen Size)		
					%																	AVG	1	2		3	
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al	V	Nb	Sn	Ce(In)									Tensile Strength
x100	x100	x10000	x10000	x10000	x100	x100	x100	x100	x1000	x1000	x1000	x1000	x100	x100	N/mm2	%	%	°C									
24X9X68	40.00 FT	N 035778	54	66,636	18	15	62	26	7	22	8	2	10	3	13	2	9	33	546	423	24.5	0.78					
24X9X68	40.00 FT	N 035779	1	1,234	18	16	63	31	11	23	9	2	12	3	13	2	10	34	538	403	25.0	0.75					
24X9X68	40.00 FT	N 035780	2	2,468	18	15	65	22	8	23	8	1	7	3	14	3	10	33	544	414	27.0	0.76					
24X9X68	40.00 FT	N 036087	3	3,702	19	16	64	27	6	19	6	1	12	4	14	1	8	34	538	408	28.0	0.76					
24X9X68	40.00 FT	N 036093	1	1,234	18	16	65	22	6	22	8	2	12	4	13	1	13	34	540	404	24.0	0.75					
24X9X76	40.00 FT	N 035789	3	4,137	18	15	98	22	11	23	9	2	13	2	14	2	13	40	533	397	24.5	0.74					
24X9X76	40.00 FT	N 035790	11	15,169	19	15	96	23	9	25	9	2	13	3	14	2	14	41	524	400	26.5	0.78					
24X9X76	40.00 FT	N 035791	7	9,653	18	12	103	32	10	25	9	2	17	2	14	1	10	42	523	396	25.5	0.76					
24X9X76	40.00 FT	N 035797	1	1,379	18	15	100	22	10	27	8	2	12	3	15	3	10	40	529	398	25.0	0.75					
24X9X76	40.00 FT	N 036105	1	1,379	18	14	95	26	11	16	6	2	18	3	15	1	11	40	552	401	24.5	0.73					
SUB TOTAL			84	106,991																							

===== NEXT =====	
<p>Note</p> <p>(1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)</p> <p>(2) Gauge length : 200 mm</p> <p>(3) Y.R = Y.S/T.S</p>	<p style="text-align: center; font-size: 2em;">J. C. Ahn</p> <p style="text-align: center;">General Manager of QA Team</p>

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.

Factory 63, Jungbong-Daero, Dong-gu, Incheon, S. Korea

Certificate No. IH20170203796-4

Class certificate No.

Issue date 2017-02-22

INSPECTION CERTIFICATE

EN 10204(2004) TYPE 3.1

Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50WM(345WM) PARA MATERIAL DE VIGA

Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition											Tensile Test		BEND TEST			Impact Test (L)			Remarks (Impact Specimen Size)											
					x100					x1000					Yield strength N/mm2	Elongation (%)	Yield Ratio ^{a)}	V-Notch	AVG		1	2	3												
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al					V	Nb					Sn	Ce _{tot}	b	c							
24X9X84	40.00 FT	N 035753	6	9,144	18	14	95	27	12	27	12	7	2	10	2	13	2	11	39	546	382	25.0	0.70												
24X9X84	40.00 FT	N 035754	3	4,572	18	14	95	28	12	27	8	1	13	2	13	1	12	39	549	380	26.5	0.69													
24X9X84	40.00 FT	N 035755	2	3,048	18	15	97	25	9	27	7	1	9	3	13	3	13	39	545	377	27.0	0.69													
24X9X84	40.00 FT	N 035783	3	4,572	18	17	97	22	9	24	9	2	13	3	15	3	14	40	541	386	25.0	0.71													
24X9X94	40.00 FT	N 035750	15	25,590	19	16	98	28	8	23	8	2	12	3	14	2	14	40	539	373	26.0	0.69													
24X9X94	40.00 FT	N 035752	1	1,706	18	15	95	25	8	26	9	1	12	3	13	1	11	39	553	381	25.5	0.69													
24X7X55	40.00 FT	E 195203	15	14,970	14	17	51	28	5	21	7	2	22	5	11	1	12	29	510	379	24.5	0.74													
24X7X55	40.00 FT	E 195205	21	20,958	15	16	51	22	6	21	7	2	14	4	11	1	14	29	512	386	25.0	0.75													
24X7X55	40.00 FT	E 195206	19	18,962	13	16	52	22	8	21	7	2	14	4	11	1	18	27	507	382	25.5	0.75													
24X7X62	40.00 FT	E 195192	6	6,750	19	17	63	16	8	26	8	2	9	3	14	2	13	34	502	377	24.5	0.75													
SUB TOTAL			91	110,272																															

===== NEXT =====

Note
 (1) Ceq: (C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)
 (2) Gauge length : 200 mm
 (3) Y.R = Y.S/T.S


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.

J. C. Ahn

General Manager of QA Team

Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50WM(345WM) PARA MATERIAL DE VIGA

INSPECTION CERTIFICATE
EN 10204(2004) TYPE 3.1

		Factory	63, Jungbong-Daero, Dong-gu, Incheon, S. Korea
		Certificate No.	IH20170203796-5
		Class certificate No.	
		Issue date	2017-02-22
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Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition													Tensile Test			Impact Test(L)			BEND TEST	Yield Ratio ^(b)	Remarks (Impact Specimen Size)	
																		Yield Strength		Elongation		V-Notch					
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al	V	Nb	Sh	CE _{in}	N/mm ²	%	AVG	1	2				3
24X7X62	40.00 FT	E 195193	20	22,500	18	16	64	20	8	26	7	2	10	8	15	2	24	34	519	398	24.0	0.77					
24X7X62	40.00 FT	E 195198	3	3,375	18	16	65	27	7	26	8	2	14	3	15	1	15	35	513	390	23.5	0.76					
24X12-3/4X104	40.00 FT	N 035928	15	28,305	18	16	96	27	9	21	7	1	12	3	13	2	10	39	542	407	25.0	0.75					
24X12-3/4X104	40.00 FT	N 035929	10	18,870	19	16	100	26	10	22	7	1	9	3	14	5	9	40	537	403	25.5	0.75					
24X12-3/4X104	40.00 FT	N 035930	4	7,548	18	16	93	25	6	21	8	2	7	4	13	1	20	37	546	405	27.0	0.74					
24X12-3/4X104	40.00 FT	N 035931	5	9,435	18	16	94	28	11	20	9	2	11	3	13	2	14	38	549	410	25.0	0.75					
24X12-3/4X131	40.00 FT	N 035878	13	30,888	18	15	97	16	9	16	6	1	10	1	16	1	14	38	546	409	27.0	0.75					
24X12-3/4X162	40.00 FT	N 035843	5	14,695	19	18	115	20	12	24	7	2	11	2	13	3	12	43	544	410	27.0	0.75					
24X12-3/4X162	40.00 FT	N 035844	6	17,634	17	20	114	28	12	23	8	2	12	2	15	1	12	41	538	412	28.0	0.77					
27X10X84	40.00 FT	N 035727	11	16,764	18	16	94	30	11	24	8	2	18	6	14	1	13	40	553	378	25.0	0.68					
SUB TOTAL			92	170,014																							

Note	
(1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)	
(2) Gauge length : 200 mm	
(3) Y.R = Y.S/T.S	
===== NEXT =====	
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.	
J. C. Ahn General Manager of QA Team	

Contract No.	
Customer	HYUNDAI CORPORATION
PO No.	32201612C911
L/C No.	
Commodity	H-BEAM
Specification	HOT ROLLED WIDE FLANGE BEAM ASTM A572 G50/A992/CSA G 40.21-13 50WM(345WM) PARA MATERIAL DE VIGA

INSPECTION CERTIFICATE

EN 10204(2004) TYPE 3.1

	
Factory	63, Jungbong-Daero, Dong-gu, Incheon, S. Korea
Certificate No.	IH20170203796-6
Class certificate No.	
Issue date	2017-02-22

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Dimensions	Length	Heat No.	Quantity (PCS)	Weight (kg)	Chemical Composition											Tensile Test		Yield Ratio	BEND TEST	Impact Test(L)			Remarks (Impact Specimen Size)		
																Tensile Strength N/mm ²	Yield Strength N/mm ²			Elongation %	V-Notch				
					C	Si	Mn	P	S	Cu	Ni	Mo	Cr	Al	V						Nb	Sn		CE _{tot} x100	AVG
27X10X84	40.00 FT	N 035733	4	6,096	18	16	96	25	7	24	7	1	10	5	14	1	10	39	548	388	26.0				
27X10X84	40.00 FT	N 035734	10	15,240	19	15	97	30	11	25	9	2	13	3	14	2	10	41	545	385	27.0				
																			548	386	26.0				
																			550	390	26.5				
TOTAL			492	703,968																					

===== END =====

Note
 (1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15)
 (2) Gauge length : 200 mm
 (3) Y.R = Y.S/T.S

<p>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.</p>	<p>J. C. Ahn General Manager of QA Team</p>
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