



2601 S. County Road 700 East  
Columbia City, Indiana 46725  
(260) 625-8100 (260) 625-8950 FAX

Quality Steel 100% EAF Melted and Manufactured in the USA  
ISO 9001:2015 and ABS Certified  
CMTR complies with EN 10204 3.1.

# CERTIFIED MILL TEST REPORT

Ship to:

Bill to:

Printed: 09 / 29 / 2023  
Produced: 08 / 28 / 2023

GENERAL INFORMATION		SPECIFICATIONS		SHIPMENT DETAILS			
<b>Product</b>	Wide Flange Beam	<b>Standards</b>		BOL # 0000792491 - 3780.00 lbs			
<b>Size</b>	W8X21		<b>Grades</b>	<b>Bundle / ASN #</b>	<b>Length</b>	<b>pcs</b>	<b>Cust PO</b>
	W200X31.3	» ASTM A992/A992M - 22	A992 / A992M	061931259	45' 0"	4	EV-138682
<b>Heat Number</b>	A233588	ASTM A6/A6M - 22		<b>Job/Ref</b>	<b>Part/Ref</b>		
<b>Condition(s)</b>	As-Rolled	ASTM A572/A572M - 21	A572 gr50/gr345				
	Fine Grained	ASTM A709/A709M - 21	A709 gr50/gr345				
	Fully Killed	AASHTO M270M/M270 - 20	M270 gr345/gr50				
	No Weld Repair	CSA G40.21-13	50WWM/345WVM				
		ASTM A36/A36M - 19	A36 / A36M				

**CHEMICAL ANALYSIS** (weight percent)

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	Nb/Cb	Al	N	B	*CE1	*CE2	*CE3	*I	Analysis Type
.09	1.13	.016	.012	.21	.31	.12	.18	.05	.008	.021	<.001	.004	.0092	.0002	.36	.392	.31	5.82	Heat

MECHANICAL TESTING					CHARPY IMPACT TESTS (available only when specified at time of order)							
Test	Yield (fy) Strength	Tensile (fu) Strength	fy / fu ratio	% Elong. {8" gage}	Temp	Absorbed Energy		ft-lbf / J			Average	Minimum
	ksi / MPa	ksi / MPa			F / C	Specimen 1	Specimen 2	Specimen 3				
1	53 / 365	75 / 515	.70	23								
2	56 / 385	75 / 515	.74	24								
3												
4												

**Notes:** \*Calculated Chemistry Values: Carbon Equivalents (C1, C2, C3, PC), Corrosion Index (I) (ASTM G101)= 26.01(Cu)+3.88(Ni)+1.20(Cr)+1.49(Si)+17.29(P)-7.23(Cu)(Ni)-9.10(Ni)(P)-33.39(Cu)<sup>2</sup>  
CE1 (IWI)=C+Mn/5+(Cr+Mo+V)/5+(Ni+Cu)/15 CE2 (AWS)=C+(Mn+Si)/8+(Cr+Mo+V)/5+(Ni+Cu)/15 CE3 (CET)= C + (Mn/5) + (Si/24) + (Cr/5) + (Ni/40) + (Mo/4) + (V/14)

I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.  
Signed: \_\_\_\_\_

I hereby certify that the content of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated requirements.  
Signed: **Doug Blomeke**   
Quality Manager

**ABS CERTIFICATION**

State of Indiana, County of Whitley Sworn to and subscribed before me  
this \_\_\_\_\_ day of \_\_\_\_\_  
Signed: \_\_\_\_\_ My commission expires: \_\_\_\_\_  
Notary Public



2601 S. County Road 700 East  
Columbia City, Indiana 46725  
(260) 625-8100 (260) 625-8950 FAX

Quality Steel 100% EAF Melted and Manufactured in the USA  
ISO 9001:2015 and ABS Certified  
CMTR complies with EN 10204 3.1.

# CERTIFIED MILL TEST REPORT

Ship to:

Bill to:

Printed: 09 / 29 / 2023  
Produced: 08 / 28 / 2023

GENERAL INFORMATION		SPECIFICATIONS		SHIPMENT DETAILS	
<b>Product</b>	Wide Flange Beam	<b>Standards</b>	<b>Grades</b>	BOL # 0000792406 - 12600.00 lbs	
<b>Size</b>	W8X21	ASTM A6/A6M - 22		<b>Bundle / ASN #</b>	<b>Length</b>
	W200X31.3	» ASTM A992/A992M - 22	A992 / A992M	061931238	50' 0"
<b>Heat Number</b>	A233590	ASTM A572/A572M - 21	A572 gr50/gr345	<b>pcs</b>	<b>Cust PO</b>
<b>Condition(s)</b>	As-Rolled	ASTM A709/A709M - 21	A709 gr50/gr345	12	CH-138903
	Fine Grained	AASHTO M270M/M270 - 20	M270 gr345/gr50	<b>Job/Ref</b>	<b>Part/Ref</b>
	Fully Killed	CSA G40.21-13	50WM/345WM		
	No Weld Repair	ASTM A36/A36M - 19	A36 / A36M		

### CHEMICAL ANALYSIS (weight percent)

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	Nb/Cb	Al	N	B	*CE1	*CE2	*CE3	*1	Analysis Type
.08	1.15	.016	.015	.21	.29	.13	.15	.03	.010	.023	<.001	.003	.0089	.0003	.34	.375	.30	5.72	Heat

### MECHANICAL TESTING

Test	Yield (fy) Strength	Tensile (fu) Strength	fy / fu ratio	% Elong. {8" gage}
	ksi / MPa	ksi / MPa		
1	59 / 405	78 / 540	.76	25
2	60 / 415	78 / 540	.78	24
3				
4				

### CHARPY IMPACT TESTS (available only when specified at time of order)

Test	Temp	Absorbed Energy		Average	Minimum
	F / C	Specimen 1	Specimen 2		
1					
2					
3					
4					
5					
6					
7					

**Notes:** \*Calculated Chemistry Values: Carbon Equivalents (C1, C2, C3, PC), Corrosion Index (I) (ASTM G101)= 28.01(Cu)+3.88(Ni)+1.20(Cr)+1.49(Si)+17.29(P)-7.29(Cu)(Ni)-9.10(Ni)(P)-33.39(Cu)  
CE1 (IIV)=C+Mn/8+(Cr+Mo+V)/5+(Ni+Cu)/15 CE2 (AWS)=C+(Mn+Si)/6+(Cr+Mo+V)/5+(Ni+Cu)/15 CE3 (CET) = C + (Mn/6) + (Si/24) + (Cr/5) + (Ni/40) + (Mo/4) + (V/14)

I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.

Signed:

### ABS CERTIFICATION

State of Indiana, County of Whitley Sworn to and subscribed before me

this \_\_\_\_\_ day of \_\_\_\_\_

Signed:

**Doug Blomeke**

Form F-8100-002-054 rev B Quality Manager

Signed:

Notary Public

My commission expires: \_\_\_\_\_

ASTM A6 - 14.6: A signature is not required on the test report; however, the document shall clearly identify the organization submitting the report. Notwithstanding the absence of a signature, the organization submitting the report is responsible for the content of the report



Long Products Group  
Structural and Rail Division  
2601 S. County Road 700 East  
Columbia City, Indiana 46725  
(260) 625-8100 (260) 625-8950 FAX

# CERTIFIED MILL TEST REPORT

Ship to:

Bill to:

Printed: 10 / 24 / 2023

Produced: 10 / 07 / 2023

Quality Steel 100% EAF Melted and Manufactured in the USA  
ISO 9001:2015 and ABS Certified  
CMTR complies with EN 10204 3.1.

GENERAL INFORMATION		SPECIFICATIONS		SHIPMENT DETAILS					
<b>Product</b>	Wide Flange Beam	<b>Standards</b>	<b>Grades</b>	BOL # 0000796274 - 22176.00 lbs					
<b>Size</b>	W8X21	» ASTM A992/A992M - 22	A992 / A992M	<b>Bundle / ASN #</b>	<b>Length</b>	<b>pcs</b>	<b>Cust PO</b>	<b>Job/Ref</b>	<b>Part/Ref</b>
	W200X31.3	ASTM A6/A6M - 22		061953688	44' 0"	12	EV-138655		
<b>Heat Number</b>	B235454	ASTM A572/A572M - 21	A572 gr50/gr345	061953683	44' 0"	12	EV-138655		
<b>Condition(s)</b>	As-Rolled	ASTM A709/A709M - 21	A709 gr50/gr345						
	Fine Grained	AASHTO M270/M270 - 20	M270 gr345/gr50						
	Fully Killed	CSA G40.21-13	50WM/345WM						
	No Weld Repair	ASTM A36/A36M - 19	A36 / A36M						

### CHEMICAL ANALYSIS (weight percent)

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	Nb/Cb	Al	N	B	*CE1	*CE2	*CE3	*I	Analysis Type
.08	1.16	.012	.014	.23	.30	.10	.14	.03	.015	.021	.002	.002	.0128	.0004	.34	.377	.30	5.67	Heat

### MECHANICAL TESTING

Test	Yield (fy) Strength ksi / MPa	Tensile (fu) Strength ksi / MPa	fy / fu ratio	% Elong. (8" gage)
1	55 / 380	75 / 515	.74	27
2	56 / 385	75 / 515	.75	26
3				
4				

### CHARPY IMPACT TESTS (available only when specified at time of order)

Test	Temp	Absorbed Energy				
	F / C	Specimen 1	Specimen 2	Specimen 3	Average	Minimum
1						
2						
3						
4						
5						
6						
7						

**Notes:** \*Calculated Chemistry Values: Carbon Equivalents (C1, C2, C3, PC), Corrosion Index (I) (ASTM G101)= 26.01(Cu)+3.88(Ni)+1.20(Cr)+1.49(Si)+17.29(P)-7.29(Cu)(Ni)-9.10(Ni)(P)-33.39(Cu)<sup>2</sup>  
CE1 (IWI)=C+Mn/5+(Cr+Mo+V)/5+(Ni+Cu)/15 CE2 (AWS)=C+(Mn+Si)/5+(Cr+Mo+V)/5+(Ni+Cu)/15 CE3 (CET) = C + (Mn/5) + (Si/24) + (Cr/5) + (Ni/40) + (Mo/4) + (V/14)

I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.

Signed:

I hereby certify that the content of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated requirements.

Signed: **Doug Blomeke**

Form F-6100-002-054 rev 8 Quality Manager

### ABS CERTIFICATION

State of Indiana, County of Whitley Sworn to and subscribed before me

this \_\_\_\_\_ day of \_\_\_\_\_

Signed: \_\_\_\_\_ My commission expires: \_\_\_\_\_

Notary Public

ASTM A6 - 14.6: A signature is not required on the test report; however, the document shall clearly identify the organization submitting the report. Notwithstanding the absence of a signature, the organization submitting the report is responsible for the content of the report



2601 S. County Road 700 East  
Columbia City, Indiana 46725  
(260) 625-8100 (260) 625-8950 FAX

Quality Steel 100% EAF Melted and Manufactured in the USA  
ISO 9001:2015 and ABS Certified  
CMTR complies with EN 10204 3.1.

# CERTIFIED MILL TEST REPORT

Ship to:

Bill to:

Printed: 10 / 24 / 2023

Produced: 10 / 07 / 2023

GENERAL INFORMATION		SPECIFICATIONS		SHIPMENT DETAILS	
		<u>Standards</u>		BOL # 0000796274 - 22176.00 lbs	
		<u>Grades</u>			
Product	Wide Flange Beam	ASTM A6/A6M - 22		Bundle / ASN #	Length
Size	W8X21	» ASTM A992/A992M - 22	A992 / A992M	pcs	Cust PO
	W200X31.3	ASTM A572/A572M - 21	A572 gr50/gr345	Job/Ref	Part/Ref
Heat Number	B235456	ASTM A709/A709M - 21	A709 gr50/gr345	061953666	44' 0" 12 EV-138655
Condition(s)	As-Rolled	AASHTO M270M/M270 - 20	M270 gr345/gr50	061953664	44' 0" 12 EV-138655
	Fine Grained	CSA G40.21-13	50WM/345WM		
	Fully Killed	ASTM A36/A36M - 19	A36 / A36M		
	No Weld Repair				

CHEMICAL ANALYSIS (weight percent)																			
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	Nb/Cb	Al	N	B	*CE1	*CE2	*CE3	*I	Analysis Type
.09	1.14	.011	.014	.23	.29	.10	.13	.03	.014	.022	.002	.002	.0122	.0004	.34	.381	.30	5.60	Heat

MECHANICAL TESTING					CHARPY IMPACT TESTS (available only when specified at time of order)									
Test	Yield (fy) Strength	Tensile (fu) Strength	fy / fu ratio	% Elong. {8" gage}	Temp F / C	Absorbed Energy ft-lbf / J		Average	Minimum					
	ksi / MPa	ksi / MPa				Specimen 1	Specimen 2			Specimen 3				
1	59 / 405	79 / 545	.75	26										
2	59 / 405	78 / 540	.76	26										
3														
4														

**Notes:** \*Calculated Chemistry Values: Carbon Equivalents (C1, C2, C3, PC), Corrosion Index (I) {ASTM G101} = 28.01(Cu)+3.88(Ni)+1.20(Cr)+1.49(Si)+17.29(P)-7.29(Cu)(Ni)-9.10(Ni)(P)-33.39(Cu²)  
CE1 (IIW) = C+Mn/5+(Cr+Mo+V)/5+(Ni+Cu)/15 CE2 (AWS) = C+(Mn+Si)/6+(Cr+Mo+V)/5+(Ni+Cu)/15 CE3 (CET) = C + (Mn/5) + (Si/24) + (Cr/5) + (Ni/40) + (Mo/4) + (V/14)

<p>I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.</p> <p>Signed: _____</p>	<p><b>ABS CERTIFICATION</b></p> <p>State of Indiana, County of Whitley Sworn to and subscribed before me</p> <p>this _____ day of _____</p> <p>Signed: _____ My commission expires: _____</p> <p>Notary Public</p>
<p>I hereby certify that the content of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated requirements.</p> <p>Signed: <b>Doug Blomeke</b> </p> <p>Quality Manager</p>	