



# Test Certificate

Form TC1: Revision 3: Date 7 Feb 2018

13609 Industrial Road, Houston, TX 77015, US

<b>Customer:</b> NORTH SHORE STEEL CO, INC 1566 MILES STREET VENDOR 52155 HOUSTON TX 77015	<b>Customer P.O.No.:</b> 303965	<b>Mill Order No.</b> 41-544068-06	<b>Shipping Manifest:</b> HT117261
	<b>Product Description:</b> ASTM A36(14)/A709(17)36/ASME SA36(17) AASHTO M270(15)36, 0.80-1.20 MN		<b>Ship Date:</b> 28 Jun 18 <b>Cert Date:</b> 28 Jun18
	<b>Size:</b> 0.500 X 96.00 X 480.0 (IN)		

Tested Pieces:				Tensiles:					Charpy Impact Tests												
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (KSI)	UTS (KSI)	%RA	Elong % 2in 8in	Tst Dir	Hardness	Abs. Energy(FTLB)				% Shear				Tst Tmp	Tst Dir	Tst Siz (mm)	BDWTT Tmp %Shr
A8R1832	8E2581	0.500 (T.L.C)	L	54	68		33	T		1	2	3	Avg	1	2	3	Avg				
			C	53	69		34	T													
B8R4524	8E2538	0.500 (T.L.C)	L	55	72		32	T													
			C	55	73		31	T													

Heat Id	Chemical Analysis																ORGN
	C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	N	IIW	
A8R1832	.18	.87	.009	.003	.05	.030	.13	.05	.06	.02	.005	.005	.001	.0002	.0070	.35	USA
B8R4524	.18	.86	.009	.003	.05	.033	.14	.05	.06	.02	.004	.005	.001	.0002	.0100	.35	USA

KILLED STEEL

CEV (IIW) = C + MN/6 + (CR+MO+V)/5 + (NI+CU)/15

MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT

MATERIAL MARKED BELOW WITH AN ASTERISK IS PRODUCED FROM COIL

PRODUCTS SHIPPED:

\* B8R4524      8E2538      PCS: 3, LBS: 19602      \* A8R1832      8E2581      PCS: 3, LBS: 19602

(P) Cust Part #:	WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION	<u>Justin Ward</u> SENIOR METALLURGIST - PRODUCT
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