



Test Certificate

Form TC1: Revision 3: Date 7 Feb 2018

13609 Industrial Road, Houston, TX 77015, US

Customer: NORTH SHORE STEEL CO, INC 1566 MILES STREET VENDOR 52155 HOUSTON TX 77015	Customer P.O.No.: 303965	Mill Order No. 41-544068-06	Shipping Manifest: HT117261
	Product Description: ASTM A36(14)/A709(17)36/ASME SA36(17) AASHTO M270(15)36, 0.80-1.20 MN		Ship Date: 28 Jun 18 Cert Date: 28 Jun18
	Size: 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 %		Tst Dir	Hardness	Abs. Energy(FTLB)				% Shear				Tst Tmp	Tst Dir	Tst Siz (mm)	BDWTT Tmp %Shr	
							2in	8in			1	2	3	Avg	1	2	3	Avg					
A8R1832	8E2581	0.500 (T.L.C)	L	54	68		33		T														
			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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