



# Test Certificate

Form TC1: Revision 3: Date 7 Feb 2018

12400 Highway 43 North, Axis, Alabama 36505, 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> 41-544068-05	<b>Shipping Manifest:</b> AT266825	
	<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> 11 Jun 18 <b>Cert Date:</b> 11 Jun18	<b>Cert No:</b> 081667292 (Page 1 of 1)
	<b>Size:</b> 0.313 X 120.0 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	
										1	2	3	Avg	1	2	3	Avg					
E8F024	A48	0.319 (DISCRT)	L	54	66		23	T														

Heat Id	Chemical Analysis																	ORGN
	C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	N	IIW		
E8F024	.05	1.15	.010	.002	.29	.022	.31	.15	.19	.05	.001	.003	.007	.0001	.0074	.32	USA	

KILLED STEEL  
 MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.  
 $CEV (IIW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$   
 MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
 100% MELTED AND MANUFACTURED IN THE USA.  
 PRODUCTS SHIPPED:  
 E8F024                      A48                      PCS: 9, LBS: 46017

(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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