



Test Certificate

Form TC1: Revision 3: Date 7 Feb 2018

12400 Highway 43 North, Axis, Alabama 36505, US

Customer: NORTH SHORE STEEL CO, INC 1566 MILES STREET VENDOR 52155 HOUSTON TX 77015	Customer P.O.No.: 303965	Mill Order No. 41-544068-07	Shipping Manifest: AT269240	
	Product Description: ASTM A36(14)/A709(17)36/ASME SA36(17) AASHTO M270(15)36, 0.80-1.20 MN		Ship Date: 20 Jul 18 Cert Date: 20 Jul 18	Cert No: 081673715 (Page 1 of 1)
	Size: 0.750 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	
										1	2	3	Avg	1	2	3	Avg					
E8F160	C25	0.747 (DISCRT)	L	47	62		33	T														
E8F160	C28	0.381 (DISCRT)	L	48	64		30	T														
E8G080	D81	0.756 (DISCRT)	L	50	74		24	T														
M8F679	C30	0.747 (DISCRT)	L	49	63		30	T														

Heat Id	Chemical Analysis																ORGN
	C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	N	IIW	
E8F160	.05	1.15	.013	.002	.29	.026	.32	.12	.21	.04	.002	.005	.008	.0001	.0071	.32	USA
E8G080	.19	.93	.013	.001	.25	.030	.31	.16	.11	.04	.000	.004	.014	.0001	.0073	.41	USA
M8F679-C30	.05	.99	.013	.002	.26	.024	.30	.12	.15	.04	.013	.003	.009	.0001	.0073	.28	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:
 E8G080 D81 PCES: 1, LBS: 9801 M8F679 C30 PCES: 1, LBS: 9801
 E8F160 C27 PCES: 1, LBS: 9801

(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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