



Test Certificate

12400 Highway 43 North, Axis, Alabama 36505, US

WARNING: This product can expose you to chemicals including nickel and nickel compounds, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Form TC1: Revision 4: Date 6 Feb 2019

Customer: SWEDISH STEEL AB MEXICO, S.A. DE C.V. BATALLON SAN PATRICIO 109 LOCAL 403 VALLE OTE SAN PEDRO GARZA GARCIA NL 66269	Customer P.O.No.: M1691 CAT	Mill Order No. 41-510378-11	Shipping Manifest: AR252630
	Product Description: HARDOX 450 ABRASION RESISTANT STEEL PLATE		Ship Date: 30 Oct 17 Cert Date: 30 Oct 17 Cert No: 081630720 (Page 1 of 1)
	Size: 19.10 X 2438 X 7315 (MM)		Heat Treat Type: QUENCHED

Tested Pieces:				Tensiles:					Charpy Impact Tests												
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (MPA)	UTS (MPA)	%RA	Elong % 50 200 (mm)	Tst Dir	Hardness	Abs. Energy(J)				% Shear			Tst Tmp	Tst Dir	Tst Siz (mm)	BDWTT Tmp %Shr	
										1	2	3	Avg	1	2	3	Avg				
E7J038	D03	19.25 (DISCRT)	L						454 HBW												
W7J539	D18	19.28 (DISCRT)	L						450 HBW												

Heat Id	Chemical Analysis																			ORGN
	C	Mn	P	S	Si	Tot Al	Sol Al	Cu	Ni	Cr	Mo	Cb	V	Ti	Sn	B	N	Ca	IIW	
E7J038	.19	1.36	.012	.0002	.26	.057	.055	.11	.06	.14	.02	.013	.008	.015	.005	.0016	.0026	.0015	.46	USA
W7J539	.19	1.41	.010	.0001	.25	.059	.059	.13	.07	.16	.02	.014	.008	.015	.006	.0018	.0027	.0010	.48	USA

KILLED HOT ROLLED ALLOY STEEL PLATE QUENCHED
 FINISH: UNCOATED
 ACCESSORIES: NONE
 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
 NO WELD REPAIR HAS BEEN PERFORMED ON THIS MATERIAL.
 THE E-MAIL ADDRESS FOR MEXICO IMPORT PURPOSES IS MEXICO.CERTIFICATES@SSAB.COM.
 MATERIAL MARKED BELOW WITH AN ASTERISK IS PRODUCED FROM COIL
 PRODUCTS SHIPPED:

E7J038 D03	5704175	PCES:	1,	KGS:	2673.50	E7J038 D03	5704174	PCES:	1,	KGS:	2673.50
W7J539 D18	5704124	PCES:	1,	KGS:	2673.50	W7J539 D18	5704123	PCES:	1,	KGS:	2673.50
E7J038 D03	5704126	PCES:	1,	KGS:	2673.50	E7J038 D03	5704125	PCES:	1,	KGS:	2673.50
E7J038 D03	5704128	PCES:	1,	KGS:	2673.50	E7J038 D03	5704127	PCES:	1,	KGS:	2673.50

(P)	Cust Part #: 1124196999	WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION	Justin Ward +1 251 662 4400 SENIOR METALLURGIST - PRODUCT
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