



Test Certificate

12400 Highway 43 North, Axis, Alabama 36505, US

Form TC1: Revision 3: Date 7 Feb 2018

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.: M2054	Mill Order No. 41-532973-02	Shipping Manifest: UR160104	
	Product Description: HARDOX 450 ABRASION RESISTANT STEEL PLATE		Ship Date: 23 May 18 Cert Date: 23 May18	Cert No: 850186206 (Page 1 of 1)
	Size: 7.90 X 2438 X 7315 (MM)		Heat Treat Type: QUENCHED	

Tested Pieces:				Tensiles:					Charpy Impact Tests					BDWTT Tmp %Shr				
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (MPA)	UTS (MPA)	%RA	Elong % 50 200 (mm)	Tst Dir	Hardness	Abs. Energy(J) 1 2 3 Avg			% Shear 1 2 3 Avg			Tst Tmp	Tst Dir	Tst Siz (mm)
E8D193	F54	8.02 (DISCRT)	C						454 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		
E8D193	.18	1.41	.009	.0001	.24	.062	.060	.12	.06	.14	.03	.014	.007	.014	.005	.0012	.0040	.0018	.46		USA

KILLED HOT ROLLED ALLOY STEEL PLATE QUENCHED
 FINISH: PRIMER PAINT
 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:
 E8D193 F54 5819782 PCES: 1, KGS: 1105.42

(P)	Cust Part #: 1753	WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION	<u>Justin Ward +1 251 662 4400</u> SENIOR METALLURGIST - PRODUCT
-----	-------------------	--	---