



# 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](http://www.P65Warnings.ca.gov).

Form TC1: Revision 4: Date 6 Feb 2019

<b>Customer:</b> SSAB MEXICO BATALLON SAN PATRICIO 109 LOCAL 403 VALLE OTE SAN PEDRO GARZA GARCIA 66269	<b>Customer P.O.No.:</b> M2812	<b>Mill Order No.</b> 41-568946-02	<b>Shipping Manifest:</b> UR168140
	<b>Product Description:</b> HARDOX 450 ABRASION RESISTANT STEEL PLATE		<b>Ship Date:</b> 20 Jun 19 <b>Cert Date:</b> 20 Jun19
	<b>Size:</b> 9.50 X 2438 X 7315 (MM)		<b>Cert No:</b> 850212175 (Page 1 of 1)
<b>Heat Treat Type:</b> 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)
W9E831	C16	9.62 (DISCRT)	L						460 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	
W9E831	.18	1.36	.008	.0006	.25	.056	.054	.13	.06	.14	.02	.013	.005	.011	.005	.0014	.0040	.0014	.45	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  
 FLAT. ACC. EN10029 CL N, ST H AND SURFACE ACC. EN10163-2 CLA1  
 HARDNESS RESULT LABEL HBW = HBW 10MM/3000KG  
 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:

W9E831 C16	60672890	PCES:	1,	KGS:	1329.49	W9E831 C16	60672889	PCES:	1,	KGS:	1329.49
W9E831 C16	60672892	PCES:	1,	KGS:	1329.49	W9E831 C16	60672891	PCES:	1,	KGS:	1329.49

(P) Cust Part #: 1751	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
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