



**ESSAR STEEL ALGOMA INC.,105 West Street, Sault Ste. Marie,Ontario, Canada P6A 7B4**

<b>SO No.,Item &amp; Date.:</b> 8014988 000130 2013/10/04		<b>Shipment No.&amp; Date.:</b> 1000069975 2013/10/05		<b>TC No., Date &amp; Time :</b> ESA-106764 2013/10/06 - 09:22:15											
<b>Sold to Customer Name and Address :</b> IRIZAR HEAVY INDUSTRIES ADAMSON VIEW 1512 EDMONTON,Alberta,Canada		<b>Ship to Customer Name and Address:</b> IRIZAR HEAVY INDUSTRIES HWY 13 & RR 235 & TOWNSHIP ROAD 64 WETASKIWIN,Alberta,Canada T9A 1X2		<b>Customer PO NO./Item:</b> 313-STOCK / 3 <b>BOL NO.:</b> 1000069975 <b>Cust.Part No.:</b> <b>Carrier :</b> C P RAIL (CAD FUNDS) - TTPX 80000											
<b>Customer Specification :</b> HR STEEL PLATE Carbon ASME SA516 GR 70 (11A) Normalized Normalize Temp 1670 °F 34 min CVNL Req. 20 / 16 FT-LBF at -50.0 F Std Thickness Tol PVQ Top and Bottom Standard Surface Flatness 1/2 SA20 Latest Ed.+Addenda of ASME Fine Grain Fully Killed															
<b>Supplementary Instructions :</b> Test Cert 1:jirizar@jirizar.com															
<b>Insp T/R :</b> Test Report As Per Spec				<b>Cust Use :</b> PVQ											
ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES. THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ESSAR STEEL ALGOMA INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-4095 FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.															
MEETS EN 10204:2004 TYPE 3.1 ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM															
ALL HEATS FULLY KILLED. HEATS INDICATED WITH (*) FINE GRAINED. HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS.															
<b>Dimensions (T x W x L)</b>	<b>Batch No.</b>	<b>Heat No-MS</b>	<b>Quantity</b>	<b>No. of Pcs</b>	<b>Dimensions (T x W x L)</b>	<b>Batch No.</b>	<b>Heat No-MS</b>	<b>Quantity</b>	<b>No. of Pcs</b>						
1.0000 " x 121.000 " x 480.00 "	AG0550	1078T3-54	16,471 LB	1	1.0000 " x 121.000 " x 480.00 "	AG0551	1078T3-05	16,471 LB	1						
1.0000 " x 121.000 " x 480.00 "	AG0552	1078T3-05	16,471 LB	1	1.0000 " x 121.000 " x 480.00 "	AG0553	1078T3-52	16,471 LB	1						
*****CHEMICAL PROPERTIES*****															
<b>Heat No. (wt%)</b>	<b>C</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Si</b>	<b>Cr</b>	<b>Ni</b>	<b>Cu</b>	<b>Mo</b>	<b>Al</b>	<b>Nb</b>	<b>V</b>	<b>B</b>	<b>Ti</b>	<b>DO</b>
1078T3*	0.20	1.10	0.007	0.004	0.340	0.09	0.01	0.01	0.00	0.024	0.000	0.014	0.0003	0.002	0.40
*****MECHANICAL PROPERTIES*****															
<b>Impact Tests</b>															
<b>Heat No.</b>	<b>Batch No.</b>	<b>SRCE</b>	<b>LAB</b>	<b>GAUGE</b>	<b>COND</b>	<b>METH</b>	<b>DIR</b>	<b>LOC</b>	<b>SIZE</b>	<b>TEMP(°F)</b>	<b>FULLENERGY(ft-lbf)</b>	<b>FULL AVG(ft-lbf)</b>			
1078T3	AG0553	166"	ALG	1.0000	N	CVN	L	B	FULL	-50	78 59 93	77			

**K. UGHADPAGA**  
MANAGER METALLURGICAL SERVICES

**\*\*WARNING\*\*** THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.



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<b>Customer Specification :</b> HR STEEL PLATE Carbon ASME SA516 GR 70 (11A) Normalized Normalize Temp 1670 °F 34 min CVNL Req. 20 / 16 FT-LBF at -50.0 F Std Thickness Tol PVQ Top and Bottom Standard Surface Flatness 1/2 SA20 Latest Ed.+Addenda of ASME Fine Grain Fully Killed		
<b>Supplementary Instructions :</b> Test Cert 1:jirizar@jirizar.com		

<b>Insp T/R :</b> Test Report As Per Spec	<b>Cust Use :</b> PVQ
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MEETS EN 10204:2004 TYPE 3.1  
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM

\*\*\*\*\* MECHANICAL PROPERTIES \*\*\*\*\*

Impact Tests												
Heat No.	Batch No.	SRCE	LAB	GAUGE	COND	METH	DIR	LOC	SIZE	TEMP(°F)	FULLENERGY(ft-lbf)	FULL AVG(ft-lbf)
1078T3	AG0550	166"	ALG	1.0000	N	CVN	L	B	FULL	-50	37 67 55	53
1078T3	AG0551	166"	ALG	1.0000	N	CVN	L	B	FULL	-50	53 48 70	57
1078T3	AG0552	166"	ALG	1.0000	N	CVN	L	B	FULL	-50	76 100 83	86
Tensile Tests												
Heat No.	Batch No.	SRCE	LAB	GAUGE	COND	METH	DIR	LOC	YIELD(KSI)	TENSILE(KSI)	EL SCALE	ELONG(%)
1078T3	AG0553	166"	ALG	1.0000	N	.2	T	B	51.0	77.0	2"	37
1078T3	AG0550	166"	ALG	1.0000	N	.2	T	B	51.0	78.0	2"	36
1078T3	AG0551	166"	ALG	1.0000	N	.2	T	B	54.0	79.0	2"	35

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1078T3	AG0552	166"	ALG	1.0000	N	.2	T	B	53.0	79.0	2"	35

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