



GERDAU AÇOMINAS S.A.  
ROD MG 443 KM 7 SN FAZENDA DO CADETE  
OURO BRANCO MG  
36420-000 BRAZIL

# MILL TEST / QUALITY CERTIFICATE

CUSTOMER FAF PRODUTOS SIDERURGICOS S A		CUSTOMER ORDER FAF 19-05-2017		SALES ORDER 5193632-00004		DIMENSIONS 15,000mm x 2000mm x 12000mm		PAGE 1/2
PRODUCT Plate		EDGE TYPE Cut edge		DELIVERY CONDITION Normalizing Rolling		DATE 08.12.2017		DOCUMENT NUMBER <b>0003933E17</b>
SPECIFICATION EN 10025-2:2004 - S355J2+N								

Gerdau S.A. certifies that the material herein described is in accordance with the applicable technical specifications. As mutual protection for customer and supplier, this certificate is considered as confidential and can not be transcribed or reproduced without the written authorization of Gerdau S.A.

PLATE #	WEIGHT (MT)	HEAT	SAMPLE	PLATE #	WEIGHT (MT)	HEAT	SAMPLE	PLATE #	WEIGHT (MT)	HEAT	SAMPLE
3705596201	2.826	27093445	27093445013	3705596901	2.826	27093445	27093445019	3705632601	2.826	27093445	27093445009
3705596202 (*)	2.826	27093445	27093445013	3705596902	2.826	27093445	27093445019	3705632602	2.826	27093445	27093445009
3705596203	2.826	27093445	27093445013	3705596903	2.826	27093445	27093445019	3705632603	2.826	27093445	27093445009
3705596301	2.826	27093445	27093445013	3705597001	2.826	27093445	27093445018	3705645301	2.826	27093445	27093445002
3705596302	2.826	27093445	27093445013	3705597002 (*)	2.826	27093445	27093445018	3705645302	2.826	27093445	27093445002
3705596303	2.826	27093445	27093445013	3705597003	2.826	27093445	27093445018	3705645303	2.826	27093445	27093445002
3705596401	2.826	27093445	27093445013	3705597201	2.826	27093445	27093445015	3705645401	2.826	27093445	27093445009
3705596402	2.826	27093445	27093445013	3705597202 (*)	2.826	27093445	27093445015	3705645402 (*)	2.826	27093445	27093445009
3705596403	2.826	27093445	27093445013	3705597203	2.826	27093445	27093445015	3705645403 (*)	2.826	27093445	27093445009
3705596501	2.826	27093445	27093445013	3705597301	2.826	27093445	27093445015	3705645403 (*)	2.826	27093445	27093445009
3705596502	2.826	27093445	27093445013	3705597302	2.826	27093445	27093445015	3705802601	2.826	28094018	28094018015
3705596503	2.826	27093445	27093445013	3705597303	2.826	27093445	27093445015	3705802602 (*)	2.826	28094018	28094018015
3705596601	2.826	27093445	27093445019	3705597401	2.826	27093445	27093445015	3705802603	2.826	28094018	28094018015
3705596602	2.826	27093445	27093445019	3705597402	2.826	27093445	27093445015	3705802701	2.826	28094018	28094018007
3705596603	2.826	27093445	27093445019	3705597403	2.826	27093445	27093445015	3705802702 (*)	2.826	28094018	28094018007
3705596701	2.826	27093445	27093445019	3705597404	2.826	27093445	27093445015	3705802703	2.826	28094018	28094018007
3705596702 (*)	2.826	27093445	27093445019	3705597405	2.826	27093445	27093445009	3705803101	2.826	28094018	28094018007
3705596703	2.826	27093445	27093445019	3705632401	2.826	27093445	27093445015	3705803102	2.826	27093445	27093445002
3705596801	2.826	27093445	27093445019	3705632402	2.826	27093445	27093445009	3705803103	2.826	27093445	27093445002
3705596802	2.826	27093445	27093445019	3705632403	2.826	27093445	27093445009	3705856001	2.826	28094017	28094017001
3705596803	2.826	27093445	27093445019	3705632501	2.826	27093445	27093445002	3705856602 (*)	2.826	28094017	28094017001
				3705632502	2.826	27093445	27093445002	3705856603 (*)	2.826	28094017	28094017001
				3705632503	2.826	27093445	27093445002				

### CHEMICAL COMPOSITION

HEAT	C(%)	Mn(%)	Si(%)	P(%)	S(%)	Al T(%)	Cr(%)	Cu(%)	Ti(%)	Mo(%)	Nb(%)	Ni(%)	V(%)	B(%)	Ca(%)	N(%)
27093445	0.16	1.46	0.22	0.015	0.005		0.039	0.02	0.016	0.01	0.034	0.01	0.045	0.0001	0.0003	0.0055
28094017	0.16	1.46	0.19	0.011	0.009	0.046	0.01	0.02	0.015	0.01	0.037	0.01	0.047	0.0004	0.0000	0.0064
28094018	0.16	1.47	0.22	0.013	0.007	0.040	0.01	0.01	0.015	0.01	0.034	0.01	0.047	0.0005	0.0000	0.0055

### TENSILE TEST

SAMPLE	DIRECTION	POSITION	YS(RE)(MPa)	TS(RT)(MPa)	YS/TS
27093445002	Transversal	1/4 Width / Ancho	425	574	0.74
27093445009	Transversal	1/4 Width / Ancho	407	580	0.73
27093445013	Transversal	1/4 Width / Ancho	413	568	0.73
27093445015	Transversal	1/4 Width / Ancho	414	553	0.75
27093445018	Transversal	1/4 Width / Ancho	414	564	0.75
27093445019	Transversal	1/4 Width / Ancho	391	546	0.72
28094017001	Transversal	1/4 Width / Ancho	429	562	0.78
28094018007	Transversal	1/4 Width / Ancho	401	554	0.72
28094018015	Transversal	1/4 Width / Ancho	405	553	0.73

### CHARPY IMPACT TEST

SAMPLE	DIRECTION	POSITION	TEMP/TEMP(°C)	IND EN/EN IND(J)	IND EN/EN IND(J)	IND EN/EN IND(J)	AVG EN/EN MD(J)
27093445002	Longitudinal	1/4 Width / Ancho	-20	123	142	98	120
27093445009	Longitudinal	1/4 Width / Ancho	-20	138	134	87	120
27093445013	Longitudinal	1/4 Width / Ancho	-20	124	72	58	85
27093445015	Longitudinal	1/4 Width / Ancho	-20	151	134	131	139
27093445018	Longitudinal	1/4 Width / Ancho	-20	79	70	34	61
27093445019	Longitudinal	1/4 Width / Ancho	-20	74	81	117	84
28094017001	Longitudinal	1/4 Width / Ancho	-20	54	35	216	102
28094018007	Longitudinal	1/4 Width / Ancho	-20	161	209	151	174
28094018015	Longitudinal	1/4 Width / Ancho	-20	86	165	70	107

### REMARKS

CEQ2 = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15  
Product Type: Hot Rolled Structural Steel Products  
EC Certificate of Conformity N°0038/CPFR/20060008/A  
Declaration of Performance: N° G003/16  
Harmonised Standard: EN 10025-1: 2004  
Essential Characteristics: Tensile / Yield / Impact Strengths and Weldability.  
S355J2, Durability, regulated substance - No Performance Determined  
Intended Uses: Building Construction or Civil Engineering  
Tolerance on Dimensions acc. to EN 10029 Tab 1 Cl B, Tab 3, Tab 4 Cl N - Type L  
Surface Quality according to EN 10163-2 Class B - Subclass 3.  
Mill Test Certificate according to EN 10204-3.1  
Ultrasonic testing according to EN 10160 Class S1E1.

UT 18 L 00885  
GR 2016/11 (120)  
**ONIRAM, LDA**

DEP. QUALIDADE  
RECEPÇÃO

RUBRICA  
**FAF - Produtos Siderúrgicos, S.A.**  
Departamento de Qualidade



### QUALITY ASSURANCE

KENJI CAMEY  
CREA 43236

### SURVEYOR





# MILL TEST / QUALITY CERTIFICATE

GERDAU AÇOMINAS S.A.  
 ROD MG 443 KM 7 SN FAZENDA DO CADETE  
 OURO BRANCO MG  
 36420-000 BRAZIL

<b>CUSTOMER</b> FAF PRODUTOS SIDERURGICOS S A	<b>CUSTOMER ORDER</b> FAF 19-05-2017	<b>SALES ORDER</b> 5193632-000004	<b>PAGE</b> 2 / 2
<b>PRODUCT</b> Plate	<b>EDGE TYPE</b> Cut edge	<b>DIMENSIONS</b> 15,000mm x 2000mm x 12000mm	<b>DATE</b> 09.12.2017
<b>SPECIFICATION</b> EN 10025-2:2004 - S355J2+N	<b>DELIVERY CONDITION</b> Normalizing Rolling		<b>DOCUMENT NUMBER</b> 0003933E17

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**TENSILE TEST**  
 GAUGE LENGTH/LONGITUD DE REFERENCIA: L0: 5,65 x (S0%)

**CHARPY IMPACT TEST**  
 SPEC SIZE/DIM MUESTRA: 10X10mm - V2mm

**ABBREVIATIONS**

(M)	Mother Plate	YS/RE	Yield Point	TS/RT	Tensile Strength	YS/TS	Elastic Ratio	ELONG/ALARG	Elongation	TEMP/TEMP	Temperature
IND	Individual Energy	AVG EN/EN MD	Average Energy								

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 S355J2, Durability, regulated substances - No Performance Determined  
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 Mill Test Certificate according to EN 10204-3.1  
 Ultrasonic testing according to EN 10160 Class S1E1.

FAF - Produtos Siderúrgicos, S.A.  
 Departamento de Qualidade



**QUALITY ASSURANCE**  
 KENJI CAMEY  
 CREA 43236

**SURVEYOR**