



**STAHLWERK THÜRINGEN**  
Grupo Alfonso Gallardo

**A03** Certificate No. 1977/3-2009  
Advice No. A090330034

**A02** Inspection Certificate 3.1  
according to ASTM A6

**A04** **SWT**

**A06**

40112

**A01** Stahlwerk Thüringen GmbH  
**A05** Quality Assurance Department  
Kronacher Straße 6  
07333 Unterwellenborn  
Germany

Ferre Barniedo S.A. de C.V.  
Col. san Cristóbal  
Av. Revolucion N°81  
55024 Ecatepec  
MEXICO

**A06** Our Order No.: 2006003109  
**A07** Your Order No.: TAC 37

**B02** Grade: GRADE 50  
according to: ASTM A572M

Pos.	Charge	Dimension	Length	Pieces	Weight [kg]	Customer No.
<b>A10</b>	<b>B07</b>	<b>B01</b>	<b>B09</b>	<b>B08</b>	<b>B13</b>	<b>A11</b>
001	68446	C 10X15,3	480 in	224	61 030	
001	68445	C 10X15,3	480 in	32	8 800	CA1015401
001	68447	C 10X15,3	480 in	112	30 535	
002	68461	C 10X20	480 in	168	61 225	CA1020401
002	68460	C 10X20	480 in	24	8 735	
002	68462	C 10X20	480 in	84	30 570	
003	68466	C 10X25	480 in	80	36 355	CA1025403
003	68469	C 10X25	480 in	136	61 985	
003	68470	C 10X25	480 in	128	58 445	
004	68474	C 10X30	480 in	56	30 815	CA1030401
004	68475	C 10X30	480 in	103	57 565	
005	67793	C 12X20,7	480 in	84	31 505	
005	67798	C 12X20,7	480 in	54	20 205	CA1220402
005	67796	C 12X20,7	480 in	102	38 010	
005	67795	C 12X20,7	480 in	180	66 675	
005	67794	C 12X20,7	480 in	144	53 205	CA1220403
006	67786	C 12X30	480 in	88	47 450	CA1230401
006	67787	C 12X30	480 in	6	3 265	
007	68271	C 15X33,9	480 in	8	4 895	CA1530403
007	68270	C 15X33,9	480 in	76	46 730	CA1540403
007	68269	C 15X33,9	480 in	88	52 980	
008	68267	C 15X40	480 in	18	12 950	CA1540401
008	68268	C 15X40	480 in	125	89 705	

Heat Analysis [%]								
Charge	C	Si	Mn	P	S	N	Nb	V
<b>B07</b>	<b>C71</b>	<b>C72</b>	<b>C73</b>	<b>C74</b>	<b>C75</b>	<b>C76</b>	<b>C77</b>	<b>C78</b>
max	0.23	0.40		0.040	0.050	0.050	0.050	0.150
min						0.005		
67786	0.09	0.19	1.19	0.021	0.028	0.008	0.019	0.007
67787	0.08	0.19	1.19	0.020	0.030	0.008	0.018	0.006
67793	0.08	0.18	1.25	0.028	0.043	0.007	0.014	0.007
67794	0.09	0.20	1.16	0.024	0.034	0.009	0.014	0.006
67795	0.07	0.18	1.05	0.026	0.043	0.009	0.012	0.004
67796	0.09	0.20	1.16	0.024	0.034	0.009	0.014	0.006
67798	0.09	0.19	1.12	0.019	0.024	0.006	0.014	0.006

**Z03** Works inspector  
Renate Schmidt

*Schmidt*

**Z02** Mar 31, 2009

TEL: 58-38-10-00  
 ORIGINAL  
 REPRODUCCION NUESTROS ARCHIVOS  
 FIEL  
 DE C.V.  
 No. Ventas@ferrebarniedo.com



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**Certificate No. 1977/3-2009** 2/4  
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Inspection Certificate 3.1  
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Heat Analysis [%]

Charge	C	Si	Mn	P	S	N	Nb	V
B07	C71	C72	C73	C74	C75	C76	C77	C78
max	0.23	0.40		0.040	0.050		0.050	0.150
min							0.005	
68267	0.09	0.23	1.16	0.015	0.016	0.007	0.014	0.007
68268	0.09	0.23	1.16	0.015	0.016	0.007	0.014	0.007
68269	0.08	0.21	1.12	0.016	0.022	0.008	0.012	0.007
68270	0.08	0.21	1.14	0.018	0.021	0.007	0.013	0.007
68271	0.08	0.22	1.14	0.019	0.026	0.007	0.013	0.007
68445	0.08	0.21	1.03	0.018	0.021	0.007	0.012	0.007
68446	0.08	0.21	1.13	0.018	0.023	0.009	0.011	0.007
68447	0.08	0.20	1.12	0.018	0.024	0.007	0.012	0.007
68460	0.09	0.20	1.14	0.019	0.024	0.009	0.014	0.007
68461	0.08	0.21	1.17	0.015	0.021	0.010	0.012	0.007
68462	0.09	0.20	1.14	0.019	0.024	0.009	0.014	0.007
68468	0.09	0.22	1.13	0.017	0.024	0.008	0.013	0.006
68469	0.07	0.20	1.14	0.017	0.025	0.009	0.012	0.007
68470	0.08	0.20	1.14	0.019	0.020	0.007	0.013	0.006
68474	0.09	0.22	1.15	0.019	0.025	0.009	0.012	0.008
68475	0.08	0.20	1.16	0.019	0.025	0.010	0.012	0.007

Tensile test

Charge	Yield stress [PSI]	Tensile strength [PSI]	Elongation 2 in [%]	Ys/Ts
B07	C11	C12	C13	C14
max		65000	21.0	
min	50000			
67786/1	55245	75690	43.6	0.73
67786/2	57420	74095	42.9	0.77
67787	54085	75690	42.2	0.71
67793/1	51475	73225	42.2	0.70
67793/2	54665	73660	42.9	0.74
67794/1	51330	72935	44.9	0.70
67794/2	57130	72210	43.6	0.79
67795/1	51475	73660	42.2	0.70
67795/2	53940	71775	43.6	0.75
67796/1	51040	73225	40.9	0.70

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Z02 Mar 31, 2009



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A07 Your Order No.: TAC 37

B02 Grade: GRADE 50  
according to: ASTM A572M

Tensile test Charge	Yield stress [PSI]	Tensile strength [PSI]	Elongation 2 in [%]	Ys/Ts
	C11	C12	C13	C14
max	50000	65000	21.0	
min				
67796/2	57130	72210	43.6	0.79
67798/1	50750	71485	43.6	0.71
67798/2	55245	72985	43.6	0.76
68267/1	54085	74240	40.9	0.73
68267/2	55825	73225	42.2	0.76
68268/1	52925	73515	42.2	0.72
68268/2	55825	73225	42.2	0.76
68269/1	52490	73080	38.3	0.72
68269/2	53215	72500	42.9	0.73
68270/1	52490	71195	39.6	0.74
68270/2	53215	73080	42.9	0.73
68271	55390	74385	40.9	0.74
68445	53795	74385	38.3	0.72
68446/1	55970	76125	37.0	0.74
68446/2	53360	71920	43.6	0.74
68447/1	52780	70760	37.0	0.75
68447/2	53795	71050	42.9	0.76
68460	52490	71195	43.6	0.74
68461/1	54665	73515	38.3	0.74
68461/2	54810	72790	43.6	0.75
68462/1	54230	71920	43.6	0.75
68462/2	55245	72790	42.9	0.76
68468/1	57275	75110	43.6	0.76
68468/2	54810	72065	42.9	0.76
68469/1	54665	72790	43.6	0.75
68469/2	53650	72065	42.9	0.74
68470/1	55970	74240	43.6	0.75
68470/2	54230	72500	42.9	0.75
68474/1	58290	75690	40.9	0.77
68474/2	54810	72355	42.9	0.76
68475/1	55100	72210	39.6	0.76
68475/2	54085	72355	43.6	0.75

Z03 Works inspector  
Renate Schmidt

*Renate Schmidt*

Z02 Mar 31, 2009

FERRE BARNIEDO S.A.  
 CERTIFICADO ORIGINAL  
 LA REMISION QUE SE HACE DE ESTE ORIGINAL  
 58386-10-00  
 ventas@ferrebarniedo.com



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FERRE BARNIEDO, S.A. DE C.V.  
CERTIFICADO ORIGINAL DE NUESTROS ARCHIVOS  
LA REMISION DE NUESTRA COPIA FIEL  
TEL 58-36-10-00  
ventas@ferrebarniedo.com

Z03

Works inspector  
Renate Schmidt

Z02

Mar 31, 2009