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 20105

EST 20203

CERTIFICADO DE CALIDAD

APS 3726

DIRECCIÓN DE DESCARGA		CLIENTE	
FERRE BARNIEDO, S.A. DE C.V. AV REVOLUCION,81 CP 55000 ECATEPEC EDO DE MEXICO		FERRE BARNIEDO, S.A. DE C.V. AV REVOLUCION,81 CP 55000 ECATEPEC EDO DE MEXICO	
MATERIAL EXPEDIDO Y CERTIFICADO POR		CARTA DE CREDITO	PUERTO DE CARGA
ACERALIA PERFILES MADRID CARRETERA TOLEDO, KM. 9 28021 MADRID TELEF. (91) 797.23.00 - FAX (91) 795.31.81			PASAJES, SPAIN
		PUERTO DE DESCARGA	BARCO
		TAMPICO	ATLANTIS PRIDE
N/REFERENCIA	Nº DE CONTRATO	Nº DE PEDIDO	FECHA
MERCHE	E-10417	3º TRIM 04	31/08/2004

Material: WF vigas. calidad DUAL ASTM A-36/A 572 Gr. 50

El exportador de los productos incluidos en el presente documento,
 Autorización aduanera no.

ACERALIA PERFILES MADRID, S.L. ES/28/0047/03
 ACERALIA PERFILES OLABERRIA S.L. ES/20/0040/03

declara que, salvo indicación en sentido contrario, estos
 productos gozan de un origen preferencial ESPARA

MATERIAL	LARGO	PAQUETE	BARRAS PAQUETE	TOTAL BARRAS	PESO PAQUETE	PESO TOTAL	COLADAS
/ BLANCO							
WF BEAMS 12x65 1212097	40'	21	4	84	4717	99.057	60423,60429,60449,60450,6 0451,60452,60453,60455
WF BEAMS 12x72 1212107	40'	10	4	40	5225	52.250	58944,60442,60457,60458,6 0459
WF BEAMS 12x79 1212118	40'	13	4	52	5734	74.542	60460,60461,60463
WF BEAMS 12x87 1291	40'	21	3	63	4735	99.435	55485,60443,60464,60465,6 0467,60468,60469
WF BEAMS 12x96 143	40'	10	3	30	5226	52.260	60443,60489,60470,60471
WF BEAMS 12x106 158	40'	31	2	62	3847	119.257	60443,60445,60446,60447,6 0448
WF BEAMS 12x120 179	40'	23	2	46	4354	100.142	55504,55506,60444,60445
WF BEAMS 12x136 202	40'	20	2	40	4935	98.700	60435,60438,60439,60443
WF BEAMS 14x61 1410091	40'	23	4	92	4427	101.821	56455,57298,60473,60477,6 0478,60479,60480,60485,60 490,60491,60492,60493
WF BEAMS 14x68 101	40'	20	4	80	4935	98.700	60450,60494,60495,60496,6 0497,60510
WF BEAMS 14x74 110	40'	19	4	78	5371	102.049	59051,60506,60507,60509
WF BEAMS 14x82 122	40'	22	3	66	4463	98.188	56462,60499,60500,60501,6 0502,60504,60505
WF BEAMS 16x67 1610700	40'	15	4	60	4863	72.945	60430,60478,60479,60480,6 0481

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ACERALIA PERFILES
 Grupo Arcelor
 CARRETERA TOLEDO, KM. 9
 28021 MADRID
 TELEF. (91) 797.23.00 - FAX (91) 505.02.57



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MATERIAL	LARGO	PAQUETE	BARRAS PAQUETE	TOTAL BARRAS	PESO PAQUETE	PESO TOTAL	COLADAS
WF BEAMS 16x77 1610115	40'	10	4	40	5588	55.880	60428,60429,60432,60483,60484
WF BEAMS 16x89 1610132	40'	21	3	63	4844	101.724	60434,60438,60439,60442,60443
WF BEAMS 16x100 149	40'	17	3	51	5443	92.531	60434,60435,60439,60484
WF BEAMS 18x88 1811128	40'	21	3	63	4881	98.301	60515,60516,60517,60518,60519,60520,60521
WF BEAMS 18x97 1811144	40'	19	3	57	5280	100.320	59107,59110,60500,60501,60502,60504,60506,60509,60510
WF BEAMS 18x119 1811177	40'	27	2	54	4318	116.586	60498,60510,60513,60514
WF BEAMS 21x48 2108071	40'	22	5	110	4354	95.788	60427,60428,60454,60455,60456
WF BEAMS 21x62 092	40'	14	5	70	5825	78.750	60428,60448,60449,60450,60451,60452
WF BEAMS 21x68 101	40'	16	4	64	4935	78.960	60444,60445,60446,60447
WF BEAMS 21x73 109	40'	20	4	80	5298	105.960	60428,60429,60442,60443,60476,60477
WF BEAMS 21x83 124	40'	21	3	63	4518	94.878	60430,60432,60433,60438,60439
WF BEAMS 21x93 138	40'	11	3	33	5082	55.882	60429,60430,60475
WF BEAMS 21x101 2112150	40'	7	2	14	3665	25.855	60408,60409,60416
WF BEAMS 21x111 165	40'	14	3	42	6042	84.588	60522,60523,60524
WF BEAMS 21x122 182	40'	11	3	33	8641	73.051	60408,60420,60421,60422,60423
WF BEAMS 21x132 197	40'	2	3	6	7185	14.370	60417,60419,60420
WF BEAMS 24x76 2409113	40'	18	4	72	5516	99.288	60458,60459,60481,60482,60483,60484,60490
WF BEAMS 12x152 1212226	40'	18	2	36	5516	99.288	60433,60435
WF BEAMS 18x130 1811194	40'	26	2	52	4717	122.642	60495,60496,60497
WF BEAMS 18x143 213	40'	21	2	42	5189	108.969	60492,60493,60494,60495
WF BEAMS 21x147 2112219	40'	12	2	24	5334	64.008	60414,60415,60524,60528
WF BEAMS 24x103 2409153	40'	18	3	54	5606	100.908	60445,60446,60447,60448
WF BEAMS 21x166 2112247	40'	20	1	20	3012	60.240	60410,60411,60412,60413

TOTAL PAQUETES 634 TOTAL PESO 3.097.711 Kg.

A02 EN 10204/3.1.b **ASTM A36 - A572 G50/A6** (B01/B02/B03) A02

MATERIAL SIZE	COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)														
		C	Mn	Si	P	S	N	V	Cr	Ni	Mo	Cu	Nb	Al	Ti	Ceq
W-12x106	60443	.09	.81	.22	.016	.018	.009	.002	.082	.110	.018	.504	.016	.002	.002	.28
W-12x106	60445	.09	.78	.20	.017	.019	.010	.002	.104	.136	.015	.576	.015	.004	.002	.29
W-12x106	60446	.10	.81	.20	.021	.012	.010	.003	.121	.105	.015	.562	.016	.003	.002	.31



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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES				FLEXIÓN POR CHOQUE IMPACT TEST				
		ReH MPa	Rm MPa	A% LO=5.65V ₅₀	Doblado 180°	°C	KV300	V1 J.	V2 J.	V3 J.
mm	mm	mm	mm	%	mm	°C	J	J	J	J
W-14x68	60494	380	480	23,7						
W-14x68	60495	371	484	22,6						
W-14x68	60496	377	486	23,7						
W-14x68	60497	372	482	22,7						
W-14x68	60510	371	483	23,7						
W-14x74	59051	381	492	23,1						
W-14x74	60506	392	495	23,3						
W-14x74	60507	381	493	23,6						
W-14x74	60509	381	495	23,6						
W-14x82	60462	386	489	22,9						
W-14x82	60499	380	480	24,7						
W-14x82	60500	379	476	24,						
W-14x82	60501	376	472	24,2						
W-14x82	60502	346	466	23,6						
W-14x82	60504	374	476	24,3						
W-14x82	60505	375	484	23,8						
W-16x100	60434	370	475	25,1						
W-16x100	60435	366	470	24,9						
W-16x100	60439	370	476	25,3						
W-16x100	60484	401	505	24,9						
W-16x67	60430	380	485	23,6						
W-16x67	60478	394	500	22,7						
W-16x67	60479	398	501	23,2						
W-16x67	60480	397	507	23,						
W-16x67	60481	406	513	23,2						
W-16x77	60428	395	485	25,						
W-16x77	60429	383	483	23,8						
W-16x77	60432	399	487	24,9						
W-16x77	60483	399	500	23,9						
W-16x77	60484	401	502	24,8						
W-16x89	60434	385	485	24,1						
W-16x89	60438	380	489	23,9						
W-16x89	60439	379	488	24,1						
W-16x89	60442	400	500	23,7						
W-16x89	60443	378	485	24,3						
W-18x119	60498	380	490	24,8						
W-18x119	60510	366	475	25,1						
W-18x119	60513	364	479	24,						
W-18x119	60514	363	476	25,3						
W-18x130	60495	370	481	23,3						
W-18x130	60496	360	480	23,						
W-18x130	60497	363	473	24,5						
W-18x143	60492	373	483	23,1						
W-18x143	60493	371	482	23,6						
W-18x143	60494	348	474	22,9						
W-18x143	60495	370	481	23,1						
W-18x86	60515	367	473	26,6						

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MATERIAL SIZE	COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)															Cev
		C	Mn	Si	P	S	N	V	Cr	Ni	Mo	Cu	Nb	Al	Ti		
W-14x61	60490	.07	.80	.23	.016	.018	.012	.001	.127	.138	.022	.544	.017	.003	.002	.28	
W-14x61	60491	.08	.85	.21	.018	.017	.011	.002	.125	.125	.020	.568	.018	.002	.002	.30	
W-14x61	60492	.09	.76	.20	.017	.016	.012	.002	.088	.121	.023	.590	.017	.002	.002	.28	
W-14x61	60493	.08	.80	.20	.021	.017	.011	.002	.172	.100	.024	.530	.017	.002	.002	.29	
W-14x68	60450	.09	.82	.21	.015	.022	.010	.002	.078	.115	.019	.502	.017	.002	.002	.29	
W-14x68	60494	.08	.76	.22	.018	.020	.011	.002	.117	.101	.021	.509	.017	.002	.002	.28	
W-14x68	60495	.08	.80	.22	.016	.013	.010	.002	.095	.144	.022	.535	.017	.002	.002	.28	
W-14x68	60496	.09	.74	.21	.019	.013	.011	.002	.119	.123	.022	.569	.017	.002	.002	.29	
W-14x68	60497	.08	.80	.24	.015	.012	.011	.002	.101	.107	.019	.498	.018	.002	.002	.28	
W-14x68	60510	.08	.73	.20	.021	.016	.010	.001	.113	.107	.020	.618	.017	.002	.002	.28	
W-14x74	59051	.09	.81	.19	.020	.028	.010	.002	.087	.098	.019	.512	.016	.002	.002	.29	
W-14x74	60506	.09	.69	.19	.021	.024	.012	.001	.118	.117	.023	.622	.016	.002	.002	.28	
W-14x74	60507	.09	.75	.20	.017	.017	.010	.001	.094	.110	.020	.615	.017	.002	.002	.28	
W-14x74	60509	.08	.72	.21	.022	.013	.011	.002	.151	.114	.020	.598	.015	.003	.002	.29	
W-14x82	56462	.09	.85	.20	.018	.012	.012	.002	.100	.121	.024	.513	.015	.002	.001	.30	
W-14x82	60499	.09	.74	.18	.017	.014	.011	.002	.120	.117	.023	.555	.017	.002	.002	.28	
W-14x82	60500	.08	.79	.21	.015	.029	.011	.002	.092	.115	.023	.581	.017	.002	.002	.28	
W-14x82	60501	.08	.81	.23	.015	.014	.010	.001	.088	.108	.019	.629	.019	.002	.002	.29	
W-14x82	60502	.08	.75	.19	.018	.021	.011	.002	.093	.109	.022	.621	.017	.002	.002	.28	
W-14x82	60504	.08	.79	.20	.018	.015	.011	.001	.091	.101	.018	.588	.017	.002	.002	.28	
W-14x82	60505	.09	.78	.20	.017	.010	.010	.001	.108	.103	.018	.530	.017	.002	.002	.28	
W-16x100	60434	.09	.79	.20	.018	.019	.010	.002	.079	.109	.021	.553	.016	.002	.002	.28	
W-16x100	60435	.09	.81	.20	.020	.023	.010	.002	.079	.107	.020	.581	.016	.002	.002	.29	
W-16x100	60439	.09	.73	.20	.028	.008	.010	.002	.132	.115	.021	.598	.016	.002	.002	.29	
W-16x100	60484	.08	1.13	.22	.022	.016	.011	.003	.104	.113	.024	.566	.018	.003	.002	.34	
W-16x67	60430	.09	.83	.21	.017	.019	.010	.003	.064	.113	.021	.581	.017	.002	.002	.29	
W-16x67	60478	.08	1.12	.20	.020	.027	.010	.002	.104	.151	.023	.594	.017	.002	.002	.34	
W-16x67	60479	.07	1.17	.20	.019	.026	.009	.002	.138	.114	.028	.538	.017	.002	.002	.34	
W-16x67	60480	.09	1.09	.28	.022	.014	.011	.002	.125	.115	.023	.540	.018	.002	.002	.34	
W-16x67	60481	.09	1.04	.24	.025	.014	.010	.002	.121	.115	.021	.595	.016	.002	.002	.34	
W-16x77	60428	.10	.77	.21	.014	.006	.011	.002	.078	.110	.019	.532	.017	.002	.002	.29	
W-16x77	60429	.10	.76	.22	.019	.018	.010	.002	.065	.128	.022	.536	.016	.002	.002	.29	
W-16x77	60432	.09	.80	.21	.022	.022	.011	.003	.086	.115	.021	.569	.017	.002	.002	.29	
W-16x77	60483	.09	1.12	.21	.020	.027	.011	.003	.084	.121	.025	.585	.017	.002	.002	.35	
W-16x77	60484	.08	1.13	.22	.022	.016	.011	.003	.104	.113	.024	.566	.018	.003	.002	.34	
W-16x89	60434	.09	.79	.20	.018	.019	.010	.002	.079	.109	.021	.553	.016	.002	.002	.28	
W-16x89	60438	.10	.80	.21	.020	.007	.012	.002	.077	.120	.019	.574	.018	.002	.002	.29	
W-16x89	60439	.09	.79	.20	.028	.008	.010	.002	.132	.115	.021	.598	.016	.002	.002	.29	
W-16x89	60442	.12	.77	.19	.021	.022	.012	.002	.108	.105	.018	.535	.016	.002	.002	.32	
W-16x89	60443	.09	.81	.22	.016	.018	.009	.002	.082	.110	.018	.504	.018	.002	.002	.28	
W-18x119	60498	.09	.83	.21	.014	.019	.012	.002	.066	.126	.023	.474	.018	.002	.002	.29	
W-18x119	60510	.08	.73	.20	.021	.016	.010	.001	.113	.107	.020	.618	.017	.002	.002	.28	
W-18x119	60513	.09	.76	.20	.019	.024	.012	.002	.104	.101	.023	.554	.014	.002	.002	.28	
W-18x119	60514	.08	.79	.22	.022	.026	.011	.002	.083	.120	.024	.584	.018	.002	.002	.28	
W-18x130	60495	.08	.80	.22	.016	.013	.010	.002	.095	.144	.022	.535	.017	.002	.002	.28	
W-18x130	60496	.09	.74	.21	.019	.013	.011	.002	.119	.123	.022	.569	.017	.002	.002	.29	
W-18x130	60497	.08	.80	.24	.016	.012	.011	.002	.101	.107	.019	.498	.018	.002	.002	.28	

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES				FLEXIÓN POR CHOQUE IMPACT TEST					
		ReH MPa	Rm MPa	AV LG=5.65VS0	Dobledo 180°	°C	KV300	V1 J.	V2 J.	V3 J.	Media J.
W-18x86	60518	384	473	24,							
W-18x86	60517	369	475	25,3							
W-18x86	60518	361	473	27,2							
W-18x86	60519	364	474	26,1							
W-18x86	60520	371	477	23,7							
W-18x86	60521	366	475	26,6							
W-18x97	59107	378	485	25,8							
W-18x97	59110	378	484	25,9							
W-18x97	60500	368	483	25,7							
W-18x97	60501	365	478	26,2							
W-18x97	60502	367	482	25,7							
W-18x97	60504	367	480	25,5							
W-18x97	60506	369	485	24,							
W-18x97	60509	368	482	24,1							
W-18x97	60510	366	480	25,3							
W-21x101	60408	396	503	24,							
W-21x101	60409	396	502	24,							
W-21x101	60418	395	502	24,3							
W-21x111	60522	380	495	24,6							
W-21x111	60523	381	489	23,9							
W-21x111	60524	385	492	24,							
W-21x122	60408	395	515	22,6							
W-21x122	60420	394	518	22,1							
W-21x122	60421	390	504	22,3							
W-21x122	60422	394	526	21,8							
W-21x122	60423	394	510	22,6							
W-21x132	60417	399	510	23,6							
W-21x132	60419	402	506	23,1							
W-21x132	60420	400	503	23,3							
W-21x147	60414	380	507	23,6							
W-21x147	60415	379	501	23,3							
W-21x147	60524	381	506	23,9							
W-21x147	60528	380	505	23,9							
W-21x166	60410	400	505	24,3							
W-21x166	60411	395	502	24,9							
W-21x166	60412	396	500	24,4							
W-21x166	60413	398	502	24,6							
W-21x48	60427	408	518	22,5							
W-21x48	60428	425	524	20,8							
W-21x48	60454	398	496	22,8							
W-21x48	60455	397	489	23,2							
W-21x48	60456	392	489	22,8							
W-21x62	60428	386	485	22,1							
W-21x62	60448	382	492	22,2							
W-21x62	60449	382	492	21,8							
W-21x62	60450	391	494	21,6							
W-21x62	60451	384	490	22,							