



ACERIA Y LAMINACIÓN

TELEF. (91) 797.23.00 - TELEX 22120 - 49632 ARIS E - TELEFAX (91) 795.31.81
CARRETERA TOLEDO, N-401 - KM. 9,200
28021 VILLAVERDE (Madrid)



CERTIFICADO DE CALIDAD - QUALITY CERTIFICATE

1484

DISCHARGE ADDRESS DIRECCIÓN DE DESCARGA	CUSTOMER CLIENTE
FERRE BARNIEDO, S.A. DE C.V. REVOLUCION, 81 CP 55000 ECATEPEC EDO DE MEXICO	FERRE BARNIEDO, S.A. DE C.V. AV REVOLUCION, 81 CP 55000 ECATEPEC EDO DE MEXICO 20866

CREDIT NUMBER CARTA DE CREDITO	PORT OF LOADING PUERTO DE CARGA	PORT OF DISCHARGE PUERTO DE DESCARGA	VESSEL BARCO
	PASAJES, SPAIN	TAMPICO	GREAT HARMONY
OUR REFERENCE N / REFERENCIA	CONTRACT NUMBER Nº DE CONTRATO	ORDER NUMBER Nº DE PEDIDO	DATE FECHA
JUDIT	E-2074	1º TRIM. 03	09/05/2003

SERIAL : WF VIGAS , CALIDAD DUAL ASTM A36-A572 GR.50
TOLERANCIAS DE ACUERDO AST A-6 . EN LARGO DE 40' .

SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
/ AMARILLO / AZUL							
W-10x49 1010073	40'	11	6	66	5334	58.674	55454,55456,55459
W-10x54 1010050	40'	10	6	60	5878	58.780	53959,55475,55476
W-10x60 1010078	40'	14	4	56	4354	60.956	55486,55487,55488
W-10x68 1010101	40'	12	4	48	4935	59.220	55483,55484,55485
W-10x77 1010115	40'	11	4	44	5588	61.468	55481,55482
W-10x88 1010131	40'	13	3	39	4790	62.270	55479
W-10x100 1010149	40'	9	3	27	5443	48.987	55477,55478
W-12x26 7007038	40'	11	12	132	5661	62.271	55678,55679,55680,55681
W-12x30 1707079	40'	11	10	110	5444	59.884	55715,55716,55718,55719,55727,55730,55733
W-12x35 1707051	40'	12	8	96	5081	60.972	55737,55740,55741,55742,55743
W-12x53 1710079	40'	5	6	30	5769	28.845	55492,55493
W-12x58 1710088	40'	14	4	56	4209	58.926	55501,55502,55503,55504
W-16x36 1607053	40'	10	8	80	5225	52.250	55574,55575
W-16x40 1607060	40'	10	8	80	5806	58.060	55549,55550,55552,55554,55555,55558,55559,55560
W-16x45 1607067	40'	12	6	72	4899	58.788	55391,55392,55393,55394
W-16x50 1607075	40'	11	6	66	5443	59.873	55455,55583,55585
W-16x57 1607085	40'	10	5	50	5171	51.710	55586,55587,55588
W-18x50 1808075	40'	20	6	120	5443	108.860	55513,55515,55516,55517,55519,55520,55521,55525,55526,55527
W-18x55 1808097	40'	10	5	50	4990	49.900	54416,55507,55509,55510
W-18x60 1808089	40'	9	5	45	5443	48.987	54409,55528,55529,55530
W-18x65 1808097	40'	25	5	125	5897	147.425	55093,55179,55478,55531,55532,55534,55535,55536,55538,55539,55540

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C70:E MATERIAL SIZE	COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)															
		C	Mn	Si	P	S	N	V	Cr	Ni	Mo	Cu	Nb	Al	Ti		Cev
B11	B08	C71	C72	C73	C74	C75	C76	C77	C78								
W-12x26	55678	,09	,90	,19	,023	,020	,011	,002	,071	,117	,020	,520	,017	,002	,001		,30
W-12x26	55679	,09	,90	,20	,018	,016	,011	,002	,068	,124	,024	,470	,017	,002	,001		,29
W-12x26	55680	,08	,84	,19	,025	,016	,010	,002	,093	,143	,027	,583	,016	,002	,001		,29
W-12x26	55681	,08	,93	,19	,022	,031	,011	,002	,113	,136	,031	,563	,019	,002	,001		,31
W-12x30	55715	,09	,83	,22	,027	,027	,011	,002	,098	,139	,027	,599	,019	,003	,001		,30
W-12x30	55716	,10	,81	,20	,031	,019	,010	,002	,116	,135	,025	,597	,018	,003	,001		,31
W-12x30	55718	,08	,82	,22	,024	,018	,012	,002	,107	,162	,030	,591	,018	,003	,001		,30
W-12x30	55719	,09	,85	,21	,029	,019	,011	,002	,090	,130	,027	,529	,017	,002	,001		,29
W-12x30	55727	,10	,87	,18	,014	,028	,009	,002	,060	,108	,021	,420	,018	,002	,001		,29
W-12x30	55730	,09	1,15	,22	,021	,018	,011	,002	,080	,118	,028	,502	,017	,002	,001		,34
W-12x30	55733	,09	1,15	,22	,025	,022	,011	,002	,095	,117	,025	,453	,018	,003	,001		,34
W-12x35	55737	,10	1,20	,27	,019	,024	,012	,002	,069	,104	,020	,406	,018	,002	,001		,35
W-12x35	55740	,08	,90	,27	,022	,029	,010	,002	,092	,122	,032	,418	,015	,002	,001		,29
W-12x35	55741	,10	,83	,19	,021	,023	,010	,003	,123	,100	,020	,501	,017	,002	,001		,30
W-12x35	55742	,09	,93	,24	,015	,014	,011	,002	,062	,110	,023	,435	,016	,002	,001		,30
W-12x35	55743	,09	,89	,21	,016	,019	,011	,002	,082	,118	,026	,422	,017	,002	,001		,29
W-12x53	55492	,09	,89	,22	,021	,020	,012	,002	,085	,127	,026	,437	,017	,002	,001		,30
W-12x53	55493	,09	,89	,19	,020	,026	,010	,003	,088	,119	,025	,419	,019	,002	,001		,29
W-12x58	55501	,09	,84	,18	,023	,017	,011	,002	,094	,119	,027	,483	,017	,002	,001		,29
W-12x58	55502	,09	,85	,23	,023	,013	,009	,002	,093	,130	,027	,502	,016	,002	,001		,30
W-12x58	55503	,09	,87	,18	,025	,027	,011	,002	,075	,112	,025	,418	,016	,002	,001		,29
W-12x58	55504	,08	,90	,19	,022	,017	,010	,002	,105	,105	,027	,535	,016	,002	,001		,30
W-16x36	55574	,08	,85	,20	,027	,023	,011	,001	,080	,110	,026	,585	,016	,002	,001		,29
W-16x36	55575	,09	,91	,23	,026	,033	,011	,003	,110	,125	,026	,527	,017	,002	,001		,31
W-16x40	55549	,09	1,16	,22	,025	,017	,011	,002	,103	,118	,026	,505	,016	,002	,001		,35
W-16x40	55550	,08	,87	,21	,025	,013	,010	,002	,095	,108	,024	,550	,016	,003	,001		,30
W-16x40	55552	,08	,84	,20	,017	,021	,012	,002	,093	,111	,023	,544	,016	,002	,001		,29
W-16x40	55554	,08	,83	,19	,022	,030	,011	,002	,089	,113	,027	,591	,017	,003	,001		,29
W-16x40	55555	,08	,88	,19	,024	,018	,012	,002	,100	,093	,022	,542	,020	,002	,001		,30
W-16x40	55558	,09	,86	,19	,021	,018	,012	,001	,074	,104	,022	,510	,018	,002	,001		,29
W-16x40	55559	,09	,87	,18	,022	,017	,012	,001	,090	,118	,025	,505	,016	,002	,001		,30
W-16x40	55560	,08	,88	,21	,024	,010	,012	,002	,090	,108	,024	,534	,017	,002	,001		,29
W-16x45	55391	,08	,81	,23	,022	,015	,010	,042	,530	,120	,029	,403	,003	,002	,001		,37
W-16x45	55392	,09	,77	,22	,022	,013	,011	,046	,561	,112	,027	,442	,001	,002	,001		,38
W-16x45	55393	,09	,75	,23	,023	,014	,010	,050	,544	,130	,029	,457	,001	,002	,001		,37
W-16x45	55394	,08	,71	,24	,022	,018	,009	,046	,555	,153	,032	,450	,001	,002	,001		,37
W-16x50	55455	,08	,94	,22	,016	,027	,010	,004	,072	,109	,023	,408	,016	,002	,001		,29
W-16x50	55583	,08	,85	,22	,021	,019	,012	,001	,103	,117	,025	,524	,018	,002	,001		,29
W-16x50	55585	,08	,88	,21	,024	,021	,012	,001	,093	,120	,023	,570	,018	,002	,001		,30
W-16x57	55586	,09	,84	,20	,023	,013	,011	,001	,102	,117	,024	,555	,017	,002	,001		,30
W-16x57	55587	,08	,86	,19	,020	,014	,010	,001	,075	,109	,023	,512	,016	,002	,001		,28
W-16x57	55588	,09	,84	,20	,023	,027	,009	,005	,077	,117	,020	,529	,017	,003	,001		,29
W-18x106	55375	,08	1,17	,21	,017	,016	,009	,002	,063	,130	,029	,499	,019	,002	,001		,34
W-18x106	55482	,09	,89	,19	,021	,013	,012	,002	,092	,138	,028	,407	,017	,002	,001		,29
W-18x106	55483	,09	,88	,21	,028	,018	,011	,002	,085	,134	,027	,395	,016	,002	,001		,29
W-18x106	55484	,09	,90	,21	,021	,027	,012	,002	,086	,116	,025	,408	,016	,002	,001		,29
W-18x106	55491	,09	,85	,18	,020	,019	,011	,002	,095	,119	,025	,412	,017	,002	,001		,29
W-18x106	55492	,09	,89	,22	,021	,020	,012	,002	,085	,127	,026	,437	,017	,002	,001		,30

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES				FLEXIÓN POR CHOQUE IMPACT TEST				
		ReH MPa	Rm MPa	A% L0=5.65VSo	Doblado 180°	°C	KV300	V1 J.	V2 J.	V3 J.
B11	B08	C11	C12	C13	C30	C03	C40/41	C42		C43
W-12x35	55737	380	528	20,6						
W-12x35	55740	379	508	21,2						
W-12x35	55741	373	495	22,5						
W-12x35	55742	377	501	22,5						
W-12x35	55743	381	495	21,4						
W-12x53	55492	377	491	21,						
W-12x53	55493	370	494	21,						
W-12x58	55501	379	485	21,7						
W-12x58	55502	381	493	21,6						
W-12x58	55503	379	485	21,						
W-12x58	55504	384	499	21,7						
W-16x36	55574	391	498	20,7						
W-16x36	55575	403	500	20,8						
W-16x40	55549	402	511	20,9						
W-16x40	55550	390	496	21,3						
W-16x40	55552	381	485	22,1						
W-16x40	55554	381	494	22,7						
W-16x40	55555	414	533	21,						
W-16x40	55558	386	498	21,8						
W-16x40	55559	388	497	22,9						
W-16x40	55560	386	487	22,						
W-16x45	55391	390	506	20,						
W-16x45	55392	391	509	20,						
W-16x45	55393	377	500	20,1						
W-16x45	55394	372	497	20,1						
W-16x50	55455	378	496	21,7						
W-16x50	55583	381	494	21,5						
W-16x50	55585	370	499	20,3						
W-16x57	55586	390	490	22,1						
W-16x57	55587	391	491	21,8						
W-16x57	55588	389	492	21,9						
W-18x106	55375	402	501	22,3						
W-18x106	55482	355	475	25,4						
W-18x106	55483	356	475	25,						
W-18x106	55484	356	476	24,7						
W-18x106	55491	355	472	24,9						
W-18x106	55492	357	475	24,6						
W-18x106	55508	355	476	25,4						
W-18x119	55394	367	490	21,7						
W-18x119	55492	357	474	23,8						
W-18x119	55493	359	472	23,7						
W-18x119	55537	358	472	23,7						
W-18x119	55538	352	474	24,						
W-18x50	55513	393	466	22,8						
W-18x50	55515	393	499	22,2						
W-18x50	55516	391	492	22,2						
W-18x50	55517	396	500	22,1						
W-18x50	55519	390	495	22,6						