



**ACERALIA PERFILES**  
Grupo Arcelor

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

**AENOR**  
**ER**  
Empresa Registrada  
ER-0036/1992  
ER-0152/1993  
ER-0262/1994

## CERTIFICADO DE CALIDAD

**APS 3732**

DIRECCIÓN DE DESCARGA		CLIENTE	
PLESA ANAHUAC, S.A.DE C.V. AV VALLE DE LAS ALAMEDAS NR.66 COL.SAN FRANCISCO CHILPAN 54940,TULTITLAN EDO.DE MEXICO		PLESA ANAHUAC, S.A.DE C.V. AV VALLE DE LAS ALAMEDAS NR.66 COL.SAN FRANCISCO CHILPAN 54940,TULTITLAN EDO.DE MEXICO	
MATERIAL EXPEDIDO Y CERTIFICADO POR		CARTA DE CREDITO	PUERTO DE CARGA
ACERALIA PERFILES OLABERRIA, S.L. CARRETERA MADRID - IRUN, KM. 419 20212 OLABERRIA (Gulpúzcoa) TELEF. (943) 80.50.00 - FAX (943) 88.04.04			PASAJES, SPAIN
		PUERTO DE DESCARGA	BARCO
		VERACRUZ (MEXICO)	ATLANTIS PRIDE
N / REFERENCIA	Nº DE CONTRATO	Nº DE PEDIDO	FECHA
MERCHE	E-10424	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 BERGARA, S.A.	ES/48/0021/03
ACERALIA PERFILES OLABERRIA S.L.	ES/20/0040/03

Declara que, salvo indicación en sentido contrario, estos  
productos gozan de un origen preferencial ESPAÑA

MATERIAL	LARGO	PAQUETE	BARRAS PAQUETE	TOTAL BARRAS	PESO PAQUETE	PESO TOTAL	COLADAS
/ AMARILLO							
WF BEAMS 8x10	40'	20	27	540	4898	97.960	44783,44784,44785,44787,44788
WF BEAMS 10x22	40'	13	12	156	4790	62.270	44870,44882
WF BEAMS 12x14	40'	13	18	234	4571	59.423	44898,44902,44903,44904
WF BEAMS 12x22	40'	21	12	252	4790	100.590	44886,44891,44892,44897
WF BEAMS 12x26	40'	21	10	210	4717	99.057	44819,44821,44822,44829,44830,44831,44833
WF BEAMS 12x30	40'	14	8	112	4355	60.970	44814,44815,44816
WF BEAMS 12x35	40'	12	8	96	5081	60.972	44810,44812,44813
WF BEAMS 16x50	40'	22	5	110	4536	99.792	44863,44864,44865
WF BEAMS 18x71	40'	19	4	76	5153	97.907	44811,44812,44813,44814,44815,44816
WF BEAMS 18x50	40'	28	4	112	3629	101.612	44789,44790,44791,44792,44794,44795,44796,44797,44798
WF BEAMS 18x86	40'	1	2	2	3121	3.121	21133

TOTAL PAQUETES 184

TOTAL PESO 843.674 Kg.



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## CERTIFICADO DE CALIDAD

APS 3732

C70.E	MATERIAL SIZE	COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)														Cev	
			C	Mn	Si	P	S	N	V	Cr	Ni	Mo	Cu	Nb	Al	Ti		
B11	B08		C71	C72	C73	C74	C75	C76	C77	C78								
W-10x22	44870		,11	1,25	,21	,020	,024	,011	,002	,141	,116	,025	,579	,018	,001	,003		,40
W-10x22	44882		,10	1,13	,18	,020	,025	,011	,002	,136	,138	,024	,547	,018	,001	,003		,36
W-12x14	44898		,09	1,14	,21	,024	,028	,010	,002	,120	,128	,024	,578	,018	,002	,003		,36
W-12x14	44902		,10	1,10	,20	,022	,027	,010	,002	,133	,119	,023	,568	,017	,001	,003		,36
W-12x14	44903		,09	1,11	,19	,025	,033	,011	,002	,124	,123	,024	,578	,018	,001	,003		,35
W-12x14	44904		,09	1,11	,19	,021	,030	,011	,002	,128	,124	,023	,569	,018	,001	,003		,35
W-12x22	44886		,11	1,02	,20	,023	,032	,010	,002	,145	,120	,023	,574	,011	,002	,003		,36
W-12x22	44891		,09	1,12	,20	,023	,031	,010	,002	,131	,119	,023	,570	,019	,001	,003		,35
W-12x22	44892		,09	1,11	,20	,023	,028	,010	,002	,132	,122	,023	,580	,019	,001	,003		,35
W-12x22	44897		,09	1,12	,20	,023	,031	,010	,002	,133	,121	,023	,570	,019	,001	,003		,35
W-12x26	44819		,08	1,18	,19	,030	,026	,009	,002	,184	,146	,025	,576	,017	,002	,003		,37
W-12x26	44821		,09	1,30	,20	,019	,029	,009	,002	,139	,183	,028	,579	,023	,001	,003		,39
W-12x26	44822		,11	1,20	,19	,019	,024	,010	,002	,130	,138	,024	,547	,024	,001	,003		,38
W-12x26	44829		,09	1,07	,18	,024	,024	,010	,038	,160	,135	,024	,580	,003	,002	,013		,36
W-12x26	44830		,09	1,10	,19	,023	,022	,011	,039	,158	,131	,024	,578	,003	,002	,014		,36
W-12x26	44831		,09	1,08	,19	,023	,023	,011	,039	,157	,132	,024	,575	,003	,002	,016		,36
W-12x26	44833		,09	1,15	,20	,026	,019	,011	,046	,174	,127	,024	,545	,003	,002	,014		,38
W-12x30	44814		,09	1,21	,20	,017	,031	,011	,002	,126	,152	,023	,578	,027	,001	,003		,37
W-12x30	44815		,08	1,23	,20	,016	,029	,011	,002	,124	,163	,024	,577	,028	,001	,003		,37
W-12x30	44816		,10	1,18	,19	,017	,029	,010	,002	,100	,118	,020	,535	,022	,001	,003		,36
W-12x35	44810		,09	1,15	,17	,017	,024	,011	,002	,132	,128	,020	,578	,021	,002	,003		,36
W-12x35	44812		,09	1,17	,19	,017	,026	,011	,002	,108	,133	,020	,543	,024	,002	,003		,36
W-12x35	44813		,09	1,16	,18	,016	,025	,010	,002	,107	,131	,020	,540	,024	,002	,003		,36
W-16x50	44863		,09	1,12	,19	,023	,032	,010	,002	,128	,121	,023	,573	,018	,002	,003		,35
W-16x50	44864		,09	1,15	,20	,023	,030	,010	,002	,128	,122	,023	,572	,019	,002	,003		,36
W-16x50	44865		,09	1,16	,20	,026	,035	,010	,002	,148	,137	,026	,577	,018	,002	,003		,36
W-18x50	44789		,09	1,13	,19	,019	,034	,010	,002	,118	,126	,022	,511	,020	,001	,002		,35
W-18x50	44790		,09	1,10	,19	,017	,024	,010	,002	,112	,123	,021	,492	,017	,001	,003		,34
W-18x50	44791		,10	1,20	,21	,021	,022	,009	,002	,164	,137	,024	,540	,019	,002	,003		,39
W-18x50	44792		,11	1,15	,20	,023	,021	,010	,002	,176	,123	,023	,525	,014	,002	,003		,38
W-18x50	44794		,10	1,15	,18	,021	,020	,010	,002	,177	,127	,022	,556	,017	,001	,003		,38
W-18x50	44795		,10	1,15	,20	,016	,023	,010	,002	,123	,138	,022	,539	,018	,002	,003		,37
W-18x50	44796		,12	1,23	,19	,022	,011	,012	,002	,179	,121	,019	,540	,026	,003	,004		,41
W-18x50	44797		,13	1,25	,19	,022	,016	,009	,002	,184	,127	,019	,563	,025	,002	,003		,42
W-18x50	44798		,10	1,19	,21	,018	,030	,011	,002	,145	,144	,020	,567	,022	,001	,003		,38
W-18x71	44811		,10	1,13	,17	,022	,029	,010	,002	,122	,124	,026	,573	,023	,002	,003		,36
W-18x71	44812		,09	1,10	,18	,024	,024	,011	,002	,150	,118	,022	,569	,015	,001	,003		,35
W-18x71	44813		,10	1,13	,17	,022	,029	,010	,002	,126	,124	,025	,578	,023	,001	,003		,36
W-18x71	44814		,12	1,13	,18	,020	,027	,010	,002	,097	,120	,022	,525	,018	,002	,003		,38
W-18x71	44815		,12	1,14	,18	,021	,027	,010	,002	,098	,121	,023	,529	,019	,001	,003		,38
W-18x71	44816		,12	1,14	,18	,021	,028	,010	,002	,098	,121	,023	,528	,020	,002	,003		,37
W-18x86	21133		,10	1,02	,17	,017	,020	,011	,026	,131	,182	,034	,533	,003	,002	,002		,36
W-8x10	44783		,11	1,20	,18	,017	,027	,011	,002	,129	,143	,021	,558	,022	,001	,003		,39
W-8x10	44784		,11	1,23	,22	,017	,027	,009	,002	,126	,142	,021	,561	,022	,001	,003		,39
W-8x10	44785		,11	1,18	,20	,018	,025	,011	,002	,122	,131	,020	,535	,020	,001	,003		,38
W-8x10	44787		,10	1,13	,19	,019	,026	,009	,002	,125	,127	,020	,513	,019	,001	,003		,36



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**APS 3732**

C70E MATERIAL SIZE	COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)														Cev		
		C	Mn	Si	P	S	N	V	Cr	Ni	Mo	Cu	Nb	Al	Ti			
B11	B08	C71	C72	C73	C74	C75	C76	C77	C78									
W-8x10	44788	,08	1,16	,20	,024	,026	,010	,002	,137	,124	,021	,577	,017	,002	,003			,36

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES				FLEXIÓN POR CHOQUE IMPACT TEST					
		ReH MPa	Rm MPa	A% LO=5.65VSo	Doblado 180°	°C	KV300	V1 J.	V2 J.	V3 J.	Media J.
B11	B08	C11	C12	C13	C20	C03	C40/41	C42			C43
W-10x22	44870	383	547	27,4		+20°	5	36	40	35	37
W-10x22	44882	359	539	31,2		+20°	5	44	41	37	41
W-12x14	44898	374	538	30,4		+20°	4	71	58	55	61
W-12x14	44902	377	545	30,4		+20°	4	50	43	43	45
W-12x14	44903	377	540	30,		+20°	4	57	43	55	52
W-12x14	44904	376	545	30,3		+20°	4	66	48	60	58
W-12x22	44886	391	547	31,9		+20°	5	41	41	36	39
W-12x22	44891	409	538	34,		+20°	5	40	38	37	38
W-12x22	44892	395	539	33,7		+20°	5	37	40	37	38
W-12x22	44897	382	542	32,2		+20°	5	43	38	38	40
W-12x26	44819	359	544	26,8		+20°	5	44	38	37	40
W-12x26	44821	357	542	26,4		+20°	5	44	37	36	39
W-12x26	44822	394	541	23,3		+20°	5	43	37	36	39
W-12x26	44829	415	537	30,8		+20°	5	150	128	147	142
W-12x26	44830	415	539	31,4		+20°	5	177	164	187	176
W-12x26	44831	405	530	30,4		+20°	5	74	59	72	68
W-12x26	44833	432	540	29,3		+20°	5	188	159	158	168
W-12x30	44814	380	546	26,4		+20°	5	50	41	40	44
W-12x30	44815	368	547	26,8		+20°	5	46	38	35	40
W-12x30	44816	397	541	27,3		+20°	5	37	36	36	36
W-12x35	44810	388	546	26,4		+20°	5	42	38	42	41
W-12x35	44812	404	541	25,9		+20°	5	38	38	38	38
W-12x35	44813	402	540	27,6		+20°	5	40	37	35	37
W-16x50	44863	393	538	31,2		+20°	7,5	37	37	41	38
W-16x50	44864	379	549	27,6		+20°	7,5	39	41	39	40
W-16x50	44865	368	545	27,3		+20°	7,5	46	36	40	41
W-18x50	44789	404	546	27,2		+20°	10	63	50	52	55
W-18x50	44790	405	539	30,4		+20°	10	86	66	77	76
W-18x50	44791	384	548	27,		+20°	10	52	40	46	46
W-18x50	44792	387	540	27,4		+20°	10	60	56	62	59
W-18x50	44794	415	542	28,6		+20°	10	91	77	87	85
W-18x50	44795	424	544	28,6		+20°	10	94	84	100	93
W-18x50	44796	412	545	27,3		+20°	10	78	61	80	73
W-18x50	44797	408	543	27,5		+20°	10	46	40	35	40
W-18x50	44798	434	548	30,3		+20°	10	117	94	91	101
W-18x71	44811	400	546	27,6		+20°	10	51	44	49	48
W-18x71	44812	381	536	30,5		+20°	10	68	61	60	63
W-18x71	44813	403	546	27,8		+20°	10	54	42	51	49
W-18x71	44814	403	547	28,3		+20°	10	50	47	47	48



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## CERTIFICADO DE CALIDAD

APS 3732

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES				Doblado 180°	°C	FLEXIÓN POR CHOQUE IMPACT TEST					Media J.
		ReH MPa	Rm MPa	A% LO=5.65V <sub>50</sub>				KV300	V1 J.	V2 J.	V3 J.		
W-18x71	44816	412	543	26,5		+20°	61	47	59	56			
W-18x86	21133	365	508	38,1		+20°	78	68	69	72			
W-8x10	44783	364	550	28,5		+20°	52	46	53	50			
W-8x10	44784	374	544	32,		+20°	59	55	58	57			
W-8x10	44785	362	548	33,1		+20°	76	64	71	70			
W-8x10	44787	365	549	30,2		+20°	79	59	64	67			
W-8x10	44788	364	539	29,6		+20°	63	57	62	61			

### 47 análisis

D01: Certificamos que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.  
B06: Marca APO

Luis Maria Lakunza