

ArcelorMittal Gipuzkoa, S.L.U.  
Long Carbon Europe  
CARRETERA MADRID - IRUN, KM. 419  
20212 OLABERRIA (Guipúzcoa)  
TELEF. (943) 80.50.00 - FAX (943) 88.04.04



ArcelorMittal

## MILL TEST CERTIFICATE

OLA P-33124

DISCHARGE ADDRESS		CUSTOMER	
Ferre Barniedo, S.A. de C.V. Edo. de Mexico San Cristobal Ecatepec, C.P. MEXICO		Ferre Barniedo, S.A. de C.V. Edo. de Mexico San Cristobal Ecatepec, C.P. MEXICO	
SHIPPED AND CERTIFIED BY		CREDIT NUMBER	PORT OF LOADING
ARCELORMITTAL OLABERRIA CARRETERA MADRID - IRUN, KM. 419 20212 OLABERRIA (Guipúzcoa) TELEF. (943) 80.50.00 - FAX (943) 88.04.04			BILBAO, SPAIN
		PORT OF DISCHARGE	VESSEL
		ALTAMIRA	ARUBABORG
OUR REFERENCE	CONTRACT NUMBER	ORDER NUMBER	DATE
mcabello	01-E-42264 / 1700015256	600476	24/10/2012

Material: WF Vigas,

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

ARCELORMITTAL GIPUZKOA, S.L.U. ES/20/0040/03

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

SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
+/WHITE							
WF BEAMS 10x12	40'	36	18	648	3919	141.084	140695,140698,140712, 140713,140714,140715
WF BEAMS 10x17	40'	16	16	256	4935	78.960	140724,140725,140726
WF BEAMS 10x19	40'	16	14	224	4827	77.232	140731,140732,140733, 140734,140735
WF BEAMS 10x33	40'	8	8	248	4790	148.490	140971,140972,140973, 140974,140975
WF BEAMS 21x44	40'	38	5	190	3992	151.696	140868,140869,140870, 140871,140872,140873, 140876,140877,140878, 140879,140880,140881, 140882
WF BEAMS 21x62	40'	44	4	176	4500	198.000	140961,140962,140963, 140964
WF BEAMS 21x73	40'	32	4	128	5298	169.536	140971,140972,140973
WF BEAMS 24x55	40'	40	5	200	4990	199.600	140887,140888,140889, 140890,140891,140892, 140893,140894,142115, 142125
WF BEAMS 24x62	40'	56	4	224	4500	252.000	140895,140896,140897, 140898,140899,140900, 142131
WF BEAMS 24x68	40'	51	3	153	3701	188.751	140840,140864,140865, 140866,140867
WF BEAMS 24x76	40'	36	3	108	4137	148.932	140871,140872,140873, 140874

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
WF BEAMS 24x84	40'	21	3	63	4572	96.012	140882,140883,140884, 142117,142118

TOTAL BUNDLES **417** TOTAL WEIGHT **1.850.293 Kg.**

A02 EN 10204/3.1 **CSA G40.21 50W/ASTM A572 G50/A992/A6** (B01/B02/B03) A03

COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)												
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	CEV
140695	.117	1,180	.200	.031	.007	.030	.150	.150	.045	.540	.003	.027	.40
140698	.106	1,150	.180	.023	.011	.045	.250	.270	.070	.470	.003	.043	.42
140712	.119	1,100	.180	.027	.011	.041	.200	.250	.057	.460	.003	.043	.41
140713	.119	1,120	.200	.033	.013	.045	.280	.290	.067	.440	.003	.041	.43
140714	.110	1,210	.210	.030	.012	.030	.200	.300	.078	.490	.003	.038	.48
140715	.089	1,190	.190	.022	.009	.040	.230	.260	.065	.420	.003	.036	.40
140724	.111	1,280	.210	.028	.012	.043	.130	.170	.068	.570	.003	.046	.42
140725	.098	1,220	.210	.021	.013	.040	.230	.240	.071	.460	.003	.036	.42
140726	.126	1,200	.220	.023	.011	.040	.200	.240	.071	.470	.003	.039	.44
140731	.096	1,190	.200	.022	.011	.034	.200	.220	.054	.430	.003	.046	.40
140732	.105	1,150	.180	.027	.012	.038	.250	.240	.061	.490	.004	.042	.42
140733	.116	1,100	.200	.023	.012	.039	.240	.220	.058	.480	.004	.029	.43
140734	.110	1,130	.200	.033	.020	.040	.200	.200	.063	.530	.004	.032	.41
140735	.119	1,230	.180	.027	.022	.041	.200	.180	.071	.500	.006	.041	.43
140840	.094	1,180	.200	.023	.019	.044	.180	.140	.034	.400	.003	.034	.38
140864	.102	1,160	.170	.030	.012	.040	.190	.160	.037	.370	.003	.043	.38
140865	.099	1,160	.180	.020	.013	.041	.170	.150	.041	.350	.003	.031	.38
140866	.104	1,130	.180	.013	.014	.039	.120	.130	.036	.460	.003	.031	.37
140867	.097	1,200	.190	.016	.012	.042	.160	.160	.052	.500	.003	.072	.39
140868	.108	1,110	.190	.015	.011	.038	.130	.160	.047	.480	.003	.050	.38
140869	.100	1,140	.170	.014	.010	.039	.140	.150	.051	.490	.003	.043	.38
140870	.100	1,120	.170	.021	.013	.039	.160	.140	.040	.470	.003	.063	.38
140871	.100	1,180	.200	.021	.015	.040	.150	.150	.038	.390	.003	.051	.38
140872	.082	1,190	.190	.014	.011	.040	.130	.160	.047	.390	.003	.036	.36
140873	.092	1,200	.190	.018	.012	.040	.130	.180	.040	.450	.003	.043	.38
140874	.101	1,180	.200	.019	.009	.040	.140	.170	.041	.450	.003	.037	.38
140876	.103	1,200	.190	.018	.011	.045	.130	.130	.032	.400	.003	.041	.38
140877	.105	1,200	.190	.021	.014	.048	.140	.160	.033	.420	.003	.048	.39
140878	.106	1,280	.200	.026	.011	.043	.170	.150	.031	.490	.003	.044	.41
140879	.102	1,180	.210	.028	.009	.046	.170	.150	.041	.420	.003	.044	.39
140880	.107	1,180	.200	.026	.013	.040	.180	.150	.043	.410	.003	.033	.39
140881	.098	1,190	.190	.015	.010	.038	.110	.150	.034	.470	.003	.040	.37
140882	.087	1,180	.190	.016	.013	.039	.120	.130	.034	.410	.003	.043	.36
140883	.102	1,180	.190	.027	.015	.041	.180	.170	.037	.470	.003	.045	.39
140884	.105	1,170	.190	.018	.013	.039	.170	.150	.032	.460	.003	.048	.39
140887	.105	1,240	.260	.021	.010	.041	.160	.170	.034	.470	.003	.052	.40
140888	.118	1,180	.230	.029	.013	.043	.200	.170	.045	.470	.003	.040	.41
140889	.109	1,230	.210	.023	.014	.040	.200	.160	.032	.480	.003	.039	.41
140890	.107	1,100	.200	.026	.010	.040	.220	.200	.052	.460	.003	.038	.40
140891	.122	1,130	.220	.024	.013	.040	.180	.170	.039	.500	.003	.041	.41
140892	.144	1,210	.220	.019	.011	.040	.120	.150	.027	.360	.003	.023	.42

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)													
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	CEV	
140893	,090	1,200	,200	,019	,013	,040	,130	,150	,044	,350	,003	,035	,37	
140894	,090	1,160	,210	,018	,014	,040	,140	,170	,049	,360	,003	,035	,36	
140895	,075	1,130	,160	,018	,017	,039	,140	,170	,049	,380	,003	,034	,35	
140896	,099	1,210	,220	,021	,015	,040	,190	,180	,055	,390	,003	,026	,40	
140897	,101	1,140	,190	,020	,016	,040	,150	,170	,052	,360	,003	,035	,37	
140898	,086	1,140	,180	,016	,017	,039	,130	,160	,047	,350	,003	,031	,35	
140899	,093	1,190	,190	,020	,018	,043	,160	,150	,044	,400	,003	,034	,38	
140900	,099	1,170	,190	,026	,016	,039	,160	,140	,037	,410	,003	,039	,38	
140961	,114	1,100	,190	,022	,008	,046	,140	,140	,037	,420	,003	,037	,38	
140962	,114	1,130	,190	,019	,008	,043	,130	,150	,032	,420	,003	,034	,38	
140963	,095	1,160	,200	,020	,012	,042	,140	,130	,026	,430	,003	,036	,37	
140964	,112	1,150	,190	,024	,008	,044	,170	,120	,025	,430	,003	,046	,39	
140971	,108	1,120	,210	,015	,015	,038	,160	,150	,033	,500	,003	,044	,38	
140972	,100	1,280	,210	,019	,019	,041	,150	,130	,029	,470	,004	,051	,40	
140973	,089	1,140	,180	,024	,011	,038	,130	,130	,030	,430	,003	,055	,36	
140974	,076	1,170	,210	,017	,024	,055	,100	,110	,031	,410	,003	,043	,34	
140975	,093	1,100	,190	,015	,013	,042	,130	,130	,027	,420	,003	,039	,35	
142115	,111	1,070	,190	,028	,016	,035	,240	,170	,039	,480	,003	,039	,40	
142117	,105	1,100	,200	,022	,012	,040	,160	,140	,031	,430	,003	,037	,37	
142118	,085	1,040	,200	,025	,026	,041	,130	,130	,023	,480	,003	,033	,34	
142125	,117	1,110	,210	,026	,019	,040	,190	,170	,042	,480	,003	,040	,40	
142131	,077	1,040	,220	,026	,018	,037	,160	,160	,041	,430	,003	,024	,34	

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8"	
B11	B03	C11	C12	C13	C13	C13	C13
W-10x12	140695	401	389	618	614	22,4	23,8
W-10x12	140698	442	445	614	617	22,5	22,4
W-10x12	140712	406	400	610	614	22,2	22,1
W-10x12	140713	422	404	615	616	22,3	22,
W-10x12	140714	445	441	617	619	22,3	21,8
W-10x12	140715	423	415	565	553	22,7	22,
W-10x17	140724	383	373	581	559	22,2	21,9
W-10x17	140725	434	418	569	567	22,3	21,9
W-10x17	140726	433	423	573	569	22,1	22,
W-10x19	140731	413	416	548	552	30,3	30,4
W-10x19	140732	415	412	529	526	30,1	30,1
W-10x19	140733	425	429	567	572	22,3	22,8
W-10x19	140734	417	414	557	552	22,7	22,7
W-10x19	140735	419	419	558	561	22,6	22,6
W-10x33	140971	425	412	548	535	22,3	21,7
W-10x33	140972	429	421	547	538	22,1	22,
W-10x33	140973	381	379	510	509	22,6	22,4
W-10x33	140974	423	412	528	510	22,7	22,2
W-10x33	140975	417	403	536	534	23,5	22,6
W-21x44	140868	412	402	529	525	22,1	21,9
W-21x44	140869	430	416	544	524	22,7	22,5
W-21x44	140870	397	393	531	519	23,2	22,8

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% L0=8"	
B11	E08	C11		C12		C13	
W-21x44	140871	438	420	538	534	22,7	21,8
W-21x44	140872	428	424	541	527	22,7	22,5
W-21x44	140873	398	392	528	522	23,2	22,8
W-21x44	140876	423	423	536	530	24,2	23,9
W-21x44	140877	414	412	548	538	23,2	22,6
W-21x44	140878	438	426	559	557	22,3	22,3
W-21x44	140879	421	415	544	544	22,6	21,8
W-21x44	140880	431	413	552	542	23,	22,7
W-21x44	140881	400	394	540	534	22,2	21,9
W-21x44	140882	422	422	531	527	23,3	22,8
W-21x62	140961	453	437	577	555	22,6	22,2
W-21x62	140962	421	417	551	542	22,5	22,
W-21x62	140963	430	421	555	538	22,9	22,8
W-21x62	140964	436	427	557	545	22,7	22,
W-21x73	140971	446	441	604	600	22,3	22,
W-21x73	140972	437	429	540	530	26,	25,1
W-21x73	140973	399	393	516	504	23,9	23,6
W-24x55	140887	415	413	554	546	23,1	22,9
W-24x55	140888	434	432	575	559	23,2	22,8
W-24x55	140889	445	427	585	581	22,5	22,4
W-24x55	140890	415	405	552	535	22,6	21,7
W-24x55	140891	437	423	589	565	22,3	22,2
W-24x55	140892	448	430	575	571	22,6	22,
W-24x55	140893	425	407	537	516	22,6	22,3
W-24x55	140894	401	401	514	514	22,9	22,7
W-24x55	142115	390	388	513	509	24,6	24,2
W-24x55	142125	421	409	558	548	23,8	23,4
W-24x62	140895	399	395	515	501	23,9	23,9
W-24x62	140896	415	405	547	529	22,6	22,3
W-24x62	140897	402	401	528	510	22,6	22,
W-24x62	140898	399	393	511	503	24,2	23,3
W-24x62	140899	419	413	541	531	22,5	21,7
W-24x62	140900	415	405	531	515	23,	22,4
W-24x62	142131	380	374	498	486	22,8	22,3
W-24x68	140840	420	412	542	540	24,9	24,8
W-24x68	140864	428	416	543	536	23,3	22,6
W-24x68	140865	418	410	542	523	25,4	24,8
W-24x68	140866	411	404	529	519	22,7	22,3
W-24x68	140867	421	410	544	537	22,5	22,1
W-24x76	140871	402	398	518	502	24,2	23,4
W-24x76	140872	418	401	535	515	25,1	24,7
W-24x76	140873	424	411	547	527	23,7	23,1
W-24x76	140874	378	369	512	496	24,4	23,6
W-24x84	140882	415	415	526	518	22,5	21,9
W-24x84	140883	425	424	553	535	22,6	22,4
W-24x84	140884	433	423	553	547	25,3	24,8
W-24x84	142117	429	418	569	558	22,2	22,
W-24x84	142118	392	386	522	504	25,8	25,5

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## 63 análisis

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

201

*L. Zabala*  
Lorenzo Zabala

FERREBARRIEDO, S.A. DE C.V.  
ESTE CERTIFICADO ES COPIA FIEL  
DEL ORIGINAL DE NUESTROS ARCHIVOS.  
AMPLIA LA REMISION No. \_\_\_\_\_  
TEL. 8-36-10-00 ventas@ferrebarriedo.com.mx