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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



MILL TEST CERTIFICATE

OLA P-34539

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	AZORESBOG
OUR REFERENCE	CONTRACT NUMBER	ORDER NUMBER	DATE
mcabello	01-E-43370 / 1700015918	600604	28/02/2013

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 18x35	40'	82	6	492	3810	312.420	143070,143071,143072, 143080,143081,143082, 143083,143091,143092, 143093
WF BEAMS 14x22	40'	29	12	348	4790	138.910	142961,142962,142963, 142964,143020,143039
WF BEAMS 24x76	40'	24	3	72	4137	99.288	143240,143241,143242, 143243,143245
WF BEAMS 24x84	40'	30	3	90	4572	137.160	143247,143248,143249, 143289,143290
WF BEAMS 24x94	40'	73	3	219	5117	373.541	143251,143252,143253, 143254,143256,143257, 143283,143290,143291, 143292
WF BEAMS 18x76	40'	76	3	228	4137	314.412	142069,142120,142124, 142125,142128,142129, 142130,142829,142830, 142831,142832,142833, 142834,142835,142836, 143128,143129,143130, 143131,143132
WF BEAMS 18x86	40'	127	2	254	3121	396.367	143102,143103,143104, 143105,143106,143107, 143109,143110,143111, 143112,143113,143115, 143116,143118,143119

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
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TOTAL BUNDLES **441** TOTAL WEIGHT **1.772.098 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				
142069	.093	1.000	.170	.014	.019	.040	.090	.160	.046	.410	.003	.023	.33				
142120	.098	1.080	.180	.023	.010	.037	.130	.150	.025	.510	.003	.041	.36				
142124	.103	1.020	.190	.015	.011	.032	.130	.150	.037	.490	.003	.038	.36				
142125	.117	1.110	.210	.026	.019	.040	.190	.170	.042	.480	.003	.040	.40				
142128	.093	1.060	.160	.020	.021	.035	.190	.160	.038	.410	.003	.031	.36				
142129	.089	1.060	.190	.011	.019	.033	.120	.130	.036	.440	.003	.030	.34				
142130	.095	.990	.220	.023	.017	.035	.160	.160	.038	.390	.003	.027	.34				
142829	.085	.990	.190	.019	.021	.030	.120	.180	.022	.350	.003	.023	.32				
142830	.092	1.050	.180	.022	.019	.034	.120	.180	.026	.390	.003	.017	.34				
142831	.090	1.070	.180	.019	.023	.039	.130	.180	.018	.360	.003	.019	.33				
142832	.082	1.000	.190	.022	.019	.031	.150	.180	.028	.390	.003	.020	.33				
142833	.090	1.010	.210	.019	.019	.034	.140	.180	.022	.350	.003	.018	.32				
142834	.087	1.030	.190	.017	.014	.035	.150	.180	.020	.350	.003	.017	.34				
142835	.108	1.030	.190	.022	.013	.036	.140	.210	.029	.360	.003	.019	.36				
142836	.070	1.030	.170	.026	.027	.039	.160	.190	.024	.360	.003	.017	.32				
142961	.079	.970	.180	.021	.018	.034	.090	.200	.034	.420	.003	.021	.31				
142962	.090	.990	.180	.018	.022	.036	.110	.210	.036	.370	.003	.021	.33				
142963	.081	1.050	.170	.017	.027	.036	.140	.200	.036	.360	.003	.018	.33				
142964	.081	1.120	.200	.021	.027	.045	.180	.350	.058	.400	.003	.019	.37				
143020	.115	1.040	.190	.020	.019	.034	.140	.230	.040	.390	.003	.023	.37				
143039	.095	1.020	.210	.023	.018	.032	.170	.220	.039	.400	.003	.023	.35				
143070	.099	1.020	.190	.020	.018	.034	.110	.200	.036	.370	.003	.028	.34				
143071	.081	1.000	.170	.018	.017	.036	.110	.200	.038	.330	.003	.029	.32				
143072	.073	.960	.190	.022	.014	.034	.130	.210	.038	.390	.003	.029	.31				
143080	.092	1.030	.200	.024	.021	.034	.140	.190	.025	.390	.003	.024	.34				
143081	.104	1.020	.200	.027	.022	.032	.160	.190	.027	.420	.003	.023	.35				
143082	.093	1.020	.180	.025	.023	.031	.170	.170	.025	.420	.003	.022	.35				
143083	.087	1.000	.170	.023	.020	.032	.170	.200	.030	.370	.003	.016	.34				
143091	.088	.990	.170	.015	.026	.032	.070	.150	.020	.410	.003	.017	.29				
143092	.076	.980	.200	.017	.022	.031	.080	.140	.027	.360	.003	.019	.30				
143093	.079	1.010	.180	.017	.018	.032	.090	.150	.029	.400	.003	.026	.31				
143102	.081	1.020	.210	.016	.018	.040	.130	.200	.022	.330	.003	.019	.33				
143103	.113	1.040	.190	.014	.014	.038	.140	.210	.043	.310	.003	.019	.37				
143104	.071	1.000	.190	.013	.024	.036	.120	.200	.042	.320	.003	.018	.31				
143105	.073	.990	.170	.011	.020	.036	.090	.180	.028	.340	.003	.019	.30				
143106	.082	.990	.180	.015	.020	.040	.100	.160	.027	.370	.003	.022	.32				
143107	.105	.970	.190	.019	.017	.039	.130	.210	.036	.370	.003	.023	.35				
143109	.082	1.010	.180	.024	.016	.037	.140	.170	.029	.470	.003	.028	.33				
143110	.094	.990	.190	.023	.020	.031	.130	.160	.030	.470	.003	.027	.34				
143111	.078	.980	.180	.018	.018	.035	.100	.160	.029	.440	.003	.025	.31				
143112	.099	1.000	.160	.019	.021	.033	.190	.190	.027	.450	.003	.022	.36				
143113	.103	1.040	.200	.023	.019	.033	.170	.180	.031	.450	.003	.025	.37				

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)													CEV								
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn										
143115	.098	1.010	.190	.027	.018	.037	.110	.150	.026	.420	.003	.023	.34									
143116	.105	.980	.170	.026	.020	.033	.140	.160	.019	.500	.003	.025	.35									
143118	.090	.990	.180	.022	.018	.037	.130	.170	.022	.470	.003	.024	.34									
143119	.088	1.030	.190	.021	.020	.040	.110	.170	.022	.460	.003	.024	.34									
143128	.087	.990	.220	.029	.025	.036	.170	.220	.043	.570	.003	.026	.35									
143129	.084	.970	.210	.019	.023	.037	.090	.160	.030	.400	.003	.025	.31									
143130	.096	.960	.190	.018	.024	.033	.100	.170	.033	.400	.003	.022	.33									
143131	.111	.980	.190	.015	.018	.035	.080	.160	.032	.370	.003	.021	.34									
143132	.096	1.020	.200	.015	.028	.035	.100	.150	.031	.330	.003	.018	.33									
143240	.094	1.000	.180	.011	.020	.037	.070	.180	.023	.330	.003	.022	.32									
143241	.090	1.070	.180	.013	.016	.036	.090	.160	.028	.310	.003	.025	.33									
143242	.081	1.020	.170	.013	.019	.036	.080	.160	.024	.350	.003	.028	.31									
143243	.083	1.020	.200	.012	.020	.037	.080	.160	.021	.320	.003	.035	.31									
143245	.087	1.010	.170	.011	.016	.036	.080	.180	.031	.370	.003	.034	.32									
143247	.093	1.010	.190	.015	.020	.033	.090	.180	.033	.370	.003	.035	.33									
143248	.090	1.040	.170	.015	.029	.032	.120	.180	.032	.350	.003	.031	.34									
143249	.091	1.030	.180	.014	.020	.037	.140	.180	.032	.370	.003	.029	.33									
143251	.092	1.000	.190	.018	.021	.035	.100	.180	.029	.330	.003	.027	.33									
143252	.098	.970	.150	.016	.013	.034	.110	.210	.030	.390	.003	.039	.33									
143253	.089	1.020	.190	.014	.031	.033	.090	.190	.028	.360	.003	.032	.33									
143254	.100	.970	.180	.013	.031	.036	.080	.180	.025	.360	.003	.029	.33									
143256	.095	.990	.180	.015	.037	.035	.090	.160	.022	.390	.003	.035	.33									
143257	.096	.980	.170	.017	.023	.035	.100	.150	.022	.370	.003	.031	.33									
143263	.092	.990	.160	.016	.018	.036	.100	.180	.027	.390	.003	.025	.33									
143289	.112	.990	.170	.019	.018	.036	.120	.170	.034	.390	.003	.033	.35									
143290	.101	1.000	.170	.030	.014	.036	.130	.170	.034	.430	.003	.038	.35									
143291	.068	1.030	.200	.024	.020	.036	.140	.250	.044	.440	.003	.042	.38									
143292	.098	1.010	.170	.019	.021	.040	.140	.220	.043	.340	.003	.033	.35									

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa	Rm MPa	A ₅₀ L0=5g %	A ₈₀ L0=5g %	A ₁₀₀ L0=5g %	A ₁₅₀ L0=5g %
W-14x22	142981	399	388	537	526	22,7	22,7
W-14x22	142962	395	395	543	523	25,1	24,2
W-14x22	142963	405	395	536	532	24,3	23,4
W-14x22	142964	401	397	604	587	22,2	21,9
W-14x22	143020	401	385	537	531	22,2	22,1
W-14x22	143039	425	411	572	562	24,5	23,6
W-18x35	143070	387	381	518	502	22,9	22,1
W-18x35	143071	397	385	533	515	22,7	22,5
W-18x35	143072	381	377	511	499	23	22,3
W-18x35	143080	400	384	537	523	22,6	22
W-18x35	143081	404	396	540	524	22,6	22
W-18x35	143082	396	380	520	515	22,9	22,1
W-18x35	143083	397	386	515	501	22,4	21,9
W-18x35	143091	388	376	507	493	22,3	21,9
W-18x35	143092	391	380	516	501	23,7	23,4
W-18x35	143093	390	384	515	499	27,5	27,2

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8°	
011	012	013	014	015	016	017	018
W-18x76	142089	383	375	508	504	25,6	25,
W-18x76	142120	397	381	510	502	22,8	21,9
W-18x76	142124	395	381	509	499	25,7	25,2
W-18x76	142125	429	413	558	544	24,1	23,3
W-18x76	142128	396	392	536	514	23,9	23,1
W-18x76	142129	388	384	524	507	24,3	24,2
W-18x76	142130	393	389	524	518	23,3	23,
W-18x76	142829	392	390	517	515	22,4	21,9
W-18x76	142830	382	366	513	492	25,1	24,2
W-18x76	142831	388	382	513	495	26,	25,1
W-18x76	142832	387	376	510	489	26,4	26,2
W-18x76	142833	383	381	505	501	23,4	23,2
W-18x76	142834	403	397	534	516	26,3	25,3
W-18x76	142835	392	390	531	521	25,	24,6
W-18x76	142836	378	362	498	494	25,4	25,3
W-18x76	143128	402	386	510	502	23,9	23,8
W-18x76	143129	410	401	534	520	24,6	24,4
W-18x76	143130	374	370	500	482	22,4	21,9
W-18x76	143131	395	382	512	508	25,	24,2
W-18x76	143132	399	387	522	504	22,1	22,
W-18x86	143102	410	396	536	535	24,3	23,8
W-18x86	143103	402	395	551	541	22,5	22,1
W-18x86	143104	389	419	564	554	22,5	22,
W-18x86	143105	383	375	493	489	22,2	22,
W-18x86	143106	426	426	579	557	22,3	22,3
W-18x86	143107	435	425	562	560	25,5	25,
W-18x86	143109	397	385	534	514	24,9	24,6
W-18x86	143110	383	369	496	492	24,8	24,1
W-18x86	143111	441	431	582	578	22,5	22,1
W-18x86	143112	426	424	573	561	23,7	23,3
W-18x86	143113	402	398	538	518	25,4	24,6
W-18x86	143115	385	382	519	503	22,4	21,9
W-18x86	143116	398	392	529	516	22,3	22,1
W-18x86	143118	386	384	499	495	22,8	22,3
W-18x86	143119	392	380	507	497	22,3	21,8
W-24x76	143240	419	409	580	544	23,1	22,6
W-24x76	143241	410	406	546	542	23,7	23,
W-24x76	143242	380	379	504	491	24,2	23,8
W-24x76	143243	417	407	558	540	23,3	22,9
W-24x76	143245	424	410	522	502	25,	24,3
W-24x84	143247	407	397	524	522	23,6	22,9
W-24x84	143248	390	378	506	503	23,8	23,8
W-24x84	143249	391	381	517	513	23,4	23,2
W-24x84	143289	376	376	522	516	24,3	23,4
W-24x94	143251	378	364	500	500	24,3	23,9
W-24x94	143252	372	364	500	484	26,	25,1
W-24x94	143253	381	376	509	499	27,2	26,7
W-24x94	143254	374	361	503	489	23,5	22,7

A01

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8°	
D1	B0	C11		C12		C13	
W-24x94	143256	367	361	498	478	25	24.2
W-24x94	143257	383	377	468	466	26.1	25.7
W-24x94	143283	377	389	503	491	23.6	23.2
W-24x94	143290	392	388	531	509	24.7	23.7
W-24x94	143291	406	399	532	512	25.8	25.3
W-24x94	143292	380	374	510	508	23.9	23.3

70 análisis

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

B08: Marca AMO

Z01

Lorenzo Zabala

FERRE BARNIEDO, S.A. DE C.V.
 ESTE CERTIFICADO ES COPIA FIEL
 DEL ORIGINAL DE NUESTROS ARCHIVOS
 AMPARADA LA REMISION No. _____
 TEL 58-36-10-00
 ventas@ferrebarniedo.com