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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-34082

DISCHARGE ADDRESS		CUSTOMER	
Lámina y Placa Comercial, S. A. de Ocampo 250 Pte. Piso 6, Letra A, Ce Monterrey MEXICO		Lámina y Placa Comercial, S. A. de Ocampo 250 Pte. Piso 6, Letra A, Ce Monterrey 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	AFRICABORG
OUR REFERENCE	CONTRACT NUMBER	ORDER NUMBER	DATE
mcabello	01-E-43067 / 1700015780	4500042910	31/12/2012

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
+//LILAC							
WF BEAMS 12x58	40'	31	4	124	4183	129.674	141652,141653,141654,141655,141656,141657
WF BEAMS 14x22	40'	2	12	24	4790	9.580	139759,141851,141852
WF BEAMS 14x74	40'	5	3	15	3970	19.850	141608,141609
WF BEAMS 14x74	40'	1	2	2	2626	2.626	141569
WF BEAMS 16x67	40'	27	3	81	3613	97.546	141643,141644,141645,141646,141647,141648
WF BEAMS 16x77	40'	10	3	30	4218	42.185	141639,141640
WF BEAMS 18x76	40'	68	3	204	4093	278.347	142056,142057,142058,142059,142062,142063,142066,142069,142070,142071,142072,142073,142075,142076,142077,142078,142079,142080,142081,142082,142083,142084,142085,142086,142087
WF BEAMS 18x86	40'	37	2	74	3101	114.745	142048,142049,142050,142051,142052,142053,142055
WF BEAMS 21x62	40'	22	4	88	4455	98.008	142213,142214,142215,142216
WF BEAMS 21x83	40'	18	3	54	4452	80.140	142208,142209,142210

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
WF BEAMS 24x55	40'	60	5	300	4976	298.565	140889,142086,142087,142088,142089,142115,142116,142117,142118,142119,142122,142123,142124,142125,142131
WF BEAMS 24x62	40'	27	4	108	4455	120.273	142125,142126,142127,142128,142129,142130,142131
WF BEAMS 24x68	40'	22	3	66	3668	80.705	141475,141476,141477,142140,142142,142143,142145,142146,142147
WF BEAMS 24x76	40'	27	3	81	4069	109.863	142130,142137,142138,142141,142142
WF BEAMS 24x84	40'	17	3	51	4531	77.029	142116,142117,142118,142119,142120,142121
WF BEAMS 24x94	40'	20	3	60	5035	100.693	142070,142071,142072,142074,142075,142076,142077
WF BEAMS 8x40	40'	14	6	84	4364	61.090	142272,142273,142274
WF BEAMS 8x31	40'	13	8	104	4525	58.830	142261,142262,142263,142264
WF BEAMS 8x28	40'	1	4	4	2029	2.029	141708
WF BEAMS 8x28	40'	11	10	110	5133	56.459	142289,142290,142297,142299
WF BEAMS 16x57	40'	10	5	50	5072	50.720	142307
WF BEAMS 10x64	40'	15	4	60	3861	57.914	142150,142151
WF BEAMS 10x49	40'	7	6	42	5372	37.604	142164,142165,142166,142167

TOTAL BUNDLES 465

TOTAL WEIGHT 1.984.475 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
139759	.084	1.230	.190	.027	.020	.038	.160	.170	.042	.460	.003	.034	.38
140889	.109	1.230	.210	.023	.014	.040	.200	.160	.032	.480	.003	.039	.41
141475	.084	1.180	.190	.017	.017	.034	.120	.240	.037	.490	.003	.025	.37
141476	.099	1.150	.190	.014	.015	.035	.110	.180	.035	.440	.003	.021	.37
141477	.087	1.170	.200	.016	.019	.036	.120	.150	.033	.430	.005	.025	.36
141569	.078	.990	.170	.025	.018	.036	.120	.160	.037	.400	.003	.041	.31
141608	.087	.990	.170	.021	.018	.029	.100	.140	.027	.410	.003	.032	.32
141609	.094	1.000	.210	.025	.020	.033	.110	.140	.028	.460	.003	.037	.33
141639	.087	1.000	.180	.034	.018	.031	.110	.130	.024	.470	.003	.042	.33
141640	.128	1.030	.170	.027	.010	.035	.130	.130	.027	.440	.003	.037	.38
141643	.081	1.120	.200	.029	.018	.035	.150	.150	.040	.450	.003	.049	.35
141644	.086	1.090	.160	.016	.019	.034	.120	.130	.036	.420	.003	.033	.34
141645	.092	1.030	.170	.016	.016	.037	.110	.140	.042	.390	.003	.032	.34
141646	.088	1.080	.180	.013	.016	.032	.100	.150	.044	.380	.003	.029	.34

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)																
	C	Mn	SI	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	CEV				
142307	077	1,080	,170	,018	,019	,043	,160	230	,047	,390	,003	,033	,35				
MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES															
		ReH MPa		Rm MPa		A% LO=8"											
		C11		C12		C13											
W-10x49	142164	402	399	532	513	22,3	22,1										
W-10x49	142165	418	405	546	528	22,4	22,1										
W-10x49	142166	412	398	536	526	22,7	21,8										
W-10x49	142167	411	401	542	540	22,5	21,9										
W-10x54	142150	391	383	515	507	23,2	22,6										
W-10x54	142151	420	409	550	539	24,5	24,1										
W-12x58	141652	407	397	515	495	22,4	22,										
W-12x58	141653	399	390	505	490	22,4	21,9										
W-12x58	141654	405	398	515	512	22,4	21,9										
W-12x58	141655	421	415	520	510	22,4	21,8										
W-12x58	141656	405	393	530	511	22,5	21,9										
W-12x58	141657	441	423	585	581	24,4	23,7										
W-14x22	139759	392	400	506	516	34,4	35,3										
W-14x22	141851	405	403	538	522	22,7	22,7										
W-14x22	141852	402	392	553	551	22,6	22,2										
W-14x74	141569	381	367	484	481	22,4	22,4										
W-14x74	141608	380	361	507	502	23,1	23,										
W-14x74	141609	384	375	505	485	22,2	22,2										
W-16x57	142307	395	387	502	493	24,8	23,9										
W-16x67	141643	402	390	519	509	22,6	22,3										
W-16x67	141644	372	368	497	485	22,8	22,1										
W-16x67	141645	376	360	496	492	22,6	22,5										
W-16x67	141646	370	366	498	493	22,6	21,7										
W-16x67	141647	372	368	504	488	24,2	23,6										
W-16x67	141648	412	404	538	522	25,1	24,5										
W-16x77	141639	421	409	580	552	22,4	21,7										
W-16x77	141640	422	418	585	561	22,2	22,										
W-18x76	142056	411	405	536	514	26,6	26,4										
W-18x76	142057	420	416	544	534	22,4	21,8										
W-18x76	142058	416	400	541	525	23,	22,4										
W-18x76	142059	391	383	543	533	24,1	23,9										
W-18x76	142062	401	391	532	514	25,8	25,1										
W-18x76	142063	391	390	556	532	24,1	23,9										
W-18x76	142066	399	385	554	540	24,3	23,8										
W-18x76	142069	383	375	508	504	25,6	25,										
W-18x76	142070	396	396	557	547	24,3	23,7										
W-18x76	142071	404	398	533	513	24,7	23,8										
W-18x76	142072	399	397	563	547	24,	24,										
W-18x76	142073	407	398	582	561	24,2	23,8										
W-18x76	142075	412	396	576	552	24,2	23,8										
W-18x76	142076	376	374	503	491	26,2	25,2										
W-18x76	142077	412	400	578	556	24,3	23,7										
W-18x76	142078	395	379	512	490	26,	25,1										

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8°	
		ReH MPa	ReL MPa	Rm MPa	Rm MPa	A% LO=8°	A% LO=8°
W-18x76	142079	416	400	577	563	24,3	23,8
W-18x76	142080	414	404	581	580	24,4	23,9
W-18x76	142081	380	376	494	492	26,1	25,2
W-18x76	142082	415	409	590	566	24,1	23,9
W-18x76	142083	381	365	508	490	27,	26,5
W-18x76	142084	392	376	506	494	25,	24,2
W-18x76	142085	379	365	503	489	25,1	25,
W-18x76	142086	408	394	565	551	24,3	23,8
W-18x76	142087	397	389	523	509	23,	22,4
W-18x86	142048	388	382	522	502	25,	24,3
W-18x86	142049	391	389	514	512	24,6	24,3
W-18x86	142050	392	387	509	503	22,8	22,3
W-18x86	142051	392	378	517	512	23,8	23,2
W-18x86	142052	399	385	527	509	22,9	22,5
W-18x86	142053	403	401	548	532	23,	22,2
W-18x86	142055	397	395	534	514	22,7	21,9
W-21x62	142213	405	396	545	526	22,8	22,2
W-21x62	142214	406	392	535	524	23,3	23,
W-21x62	142215	413	405	552	528	22,5	21,8
W-21x62	142216	413	407	549	536	22,8	22,1
W-21x83	142208	404	390	512	512	22,3	22,
W-21x83	142209	406	393	535	517	24,3	23,7
W-21x83	142210	405	398	552	532	27,6	26,6
W-24x55	140889	445	427	585	581	22,5	22,4
W-24x55	142086	389	382	507	489	22,6	22,2
W-24x55	142087	435	424	571	557	22,5	21,7
W-24x55	142088	421	405	550	540	25,	24,6
W-24x55	142089	413	409	541	537	23,9	23,7
W-24x55	142115	390	388	513	509	24,6	24,2
W-24x55	142116	396	384	517	510	23,6	23,2
W-24x55	142117	392	382	516	507	25,8	25,3
W-24x55	142118	414	406	528	526	22,9	22,6
W-24x55	142119	406	398	547	531	22,7	22,4
W-24x55	142122	429	419	546	528	23,1	22,4
W-24x55	142123	402	393	531	511	23,	22,1
W-24x55	142124	386	386	507	501	24,9	24,2
W-24x55	142125	421	409	558	548	23,8	23,4
W-24x55	142131	414	407	555	540	23,4	23,3
W-24x62	142125	424	416	555	551	22,8	22,1
W-24x62	142126	417	417	553	529	24,8	24,3
W-24x62	142127	390	382	529	517	23,3	22,6
W-24x62	142128	396	382	527	517	23,	22,3
W-24x62	142129	388	385	520	513	22,7	22,4
W-24x62	142130	383	383	514	496	22,7	22,
W-24x62	142131	380	374	498	486	22,8	22,3
W-24x68	141475	408	397	539	517	24,4	23,8
W-24x68	141476	392	390	511	507	24,6	24,4
W-24x68	141477	386	384	518	496	27,	26,6

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% L0-B ⁰	
W-24x68	142140	428	418	567	563	22.5	21.8
W-24x68	142142	406	411	541	548	22.4	22.5
W-24x68	142143	410	402	547	540	24.9	24.5
W-24x68	142145	436	425	567	548	22.2	21.7
W-24x68	142146	424	408	539	529	22.9	22.5
W-24x68	142147	412	396	546	532	24.3	23.7
W-24x76	142130	399	392	518	505	24.6	23.8
W-24x76	142137	407	395	520	500	22.6	22.2
W-24x76	142138	408	400	546	534	24.6	23.8
W-24x76	142141	391	386	517	503	25.1	24.9
W-24x76	142142	380	385	507	513	22.3	22.3
W-24x84	142116	411	403	537	531	23.9	23.9
W-24x84	142117	429	418	589	558	22.2	22
W-24x84	142118	392	386	522	504	25.8	25.5
W-24x84	142119	400	394	519	503	24.1	23.6
W-24x84	142120	395	387	510	499	25.9	25.4
W-24x84	142121	401	390	534	523	22.4	22.2
W-24x94	142070	365	369	504	500	26.2	25.3
W-24x94	142071	383	379	514	496	24.3	23.6
W-24x94	142072	398	389	531	509	26.3	26.3
W-24x94	142074	387	379	517	497	28.1	27.3
W-24x94	142075	392	382	530	512	24.1	24
W-24x94	142076	365	369	494	493	27.2	26.6
W-24x94	142077	369	367	486	494	27.9	27.1
W-8x28	141708	411	410	551	541	22.5	22.1
W-8x28	142289	392	382	528	508	22.4	21.7
W-8x28	142290	379	373	498	496	22.1	22
W-8x28	142297	391	383	506	505	22.5	21.7
W-8x28	142299	393	381	516	509	22.3	22
W-8x31	142261	425	421	557	535	22.4	22.2
W-8x31	142262	376	371	498	495	23.2	22.7
W-8x31	142263	394	385	538	530	22.8	22.5
W-8x31	142264	415	401	561	540	22.5	21.8
W-8x40	142272	404	391	525	514	23	22.3
W-8x40	142273	401	395	521	506	22.6	22.2
W-8x40	142274	387	377	508	501	22.4	22

111 análisis

DD1: Certificamos que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.

B06: Marca AMO

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Lorenzo Zabala