

A01 ArcelorMittal Olaberria-Bergara
 ArcelorMittal Europe - Long Products
 CARRETERA MADRID - IRUN, KM. 417
 20212 OLABERRIA (Gipuzkoa)
 TELEF. (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

OLA P-79070

DISCHARGE ADDRESS		CUSTOMER	
SHIPPED AND CERTIFIED BY		CREDIT NUMBER	PORT OF LOADING
ARCELORMITTAL OLABERRIA CARRETERA MADRID - IRUN, KM. 417 20212 OLABERRIA (Gipuzkoa) TELEF. (943) 80.50.00 - FAX (943) 88.04.04			PASAJES, SPAIN
		PORT OF DISCHARGE	VESSEL
		HOUSTON	FERASET
OUR REFERENCE	CONTRACT NUMBER	ORDER NUMBER	DATE
P1701577	E-82562/1700033156	SSW131641	17/12/2022

AMERICAN WIDE FLANGE BEAMS

"WE HEREBY CONFIRM THAT THE MATERIAL REPORTED IN THE MILL TEST CERTIFICATE (NUMBER ABOVE MENTIONED) WAS MELTED AND MANUFACTURED IN SPAIN"

SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
+/RED							
Instrucciones de carga: embarque en bodega							
Expedicion por barco min. T: 020							
WF BEAMS 6x20	40'	2	14	28	6087	10.174	217424
WF BEAMS 6x20	40'	1	10	10	3633	3.633	217424
WF BEAMS 8x18	40'	3	16	48	5189	15.567	217239,217240,217241
WF BEAMS 8x18	50'	2	12	24	4865	9.730	217240,217241
WF BEAMS 8x18	55'	2	10	20	4459	8.918	217242
WF BEAMS 8x18	60'	3	10	30	4865	14.595	217241,217242
WF BEAMS 8x21	40'	2	12	24	4579	9.158	217249
WF BEAMS 8x21	50'	2	10	20	4770	9.540	217248,217249
WF BEAMS 8x21	60'	2	8	16	4579	9.158	217249
WF BEAMS 8x24	35'	2	12	24	4596	9.192	217546,217549
WF BEAMS 8x24	40'	12	10	120	4377	52.524	216815,216817,217544,217545,217546,217547,217548,217549,217550,217551,217552,217554
WF BEAMS 8x24	50'	4	8	32	4377	17.508	217548,217550,217551,217554,217555
WF BEAMS 8x24	55'	2	8	16	4815	9.630	217556
WF BEAMS 8x24	60'	4	8	32	5252	21.008	217545,217546,217552,217554

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
WF BEAMS 8x28	40'	2	10	20	5084	10.168	216612,217541,217542,217543
WF BEAMS 8x28	50'	2	8	16	5084	10.168	217543
WF BEAMS 8x28	60'	2	6	12	4576	9.152	217543
WF BEAMS 10x12	35'	2	22	44	4201	8.402	217557,217559
WF BEAMS 10x12	40'	4	22	88	4801	19.204	217563,217565
WF BEAMS 10x12	45'	1	20	20	4910	4.910	217563
WF BEAMS 10x12	50'	3	18	54	4910	14.730	217562
WF BEAMS 10x22	40'	4	12	48	4784	19.136	217560,217561,217563
WF BEAMS 10x22	50'	2	10	20	4983	9.966	217560,217561
WF BEAMS 10x22	60'	2	8	16	4784	9.568	217562,217563
WF BEAMS 10x26	40'	2	10	20	4694	9.388	216873,217557,217558
WF BEAMS 10x26	60'	3	6	18	4225	12.675	217557,217558
WF BEAMS 10x30	40'	3	8	24	4370	13.110	217369,217524
WF BEAMS 10x33	40'	3	8	24	4789	14.367	217316,217317,217318
WF BEAMS 10x33	45'	2	6	12	4041	8.082	217318
WF BEAMS 10x33	50'	2	6	12	4490	8.980	217318,217319
WF BEAMS 10x33	55'	2	6	12	4939	9.878	217318
WF BEAMS 10x33	60'	3	4	12	3592	10.776	217316,217317
WF BEAMS 10x39	40'	2	6	12	4243	8.486	217320,217321
WF BEAMS 10x45	60'	2	4	8	4901	9.802	217323,217324
WF BEAMS 12x14	40'	2	20	40	5121	10.242	217545,217546
WF BEAMS 12x14	50'	5	10	50	3200	16.000	217545,217547
WF BEAMS 12x16	40'	2	18	36	5223	10.446	217550,217551
WF BEAMS 12x16	60'	2	10	20	4353	8.706	217550
WF BEAMS 12x19	40'	3	10	30	3450	10.350	217458,217459
WF BEAMS 12x19	45'	4	10	40	3882	15.528	217544
WF BEAMS 12x19	50'	4	10	40	4313	17.252	217543
WF BEAMS 12x19	60'	4	10	40	5176	20.704	217461,217521
WF BEAMS 12x22	40'	3	10	30	3987	11.961	217455
WF BEAMS 12x26	40'	3	10	30	4718	14.154	217361,217362,217363,217368,217370
WF BEAMS 12x26	45'	3	6	18	3185	9.555	217363,217367,217368
WF BEAMS 12x26	50'	3	6	18	3539	10.617	217361,217362,217370

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
WF BEAMS 12x26	60'	4	6	24	4246	16.984	217368
WF BEAMS 12x30	40'	3	6	18	3255	9.765	216862,217361
WF BEAMS 12x30	40'	1	5	5	2713	2.713	217361
WF BEAMS 12x30	50'	3	6	18	4069	12.207	217361
WF BEAMS 12x35	40'	3	6	18	3804	11.412	217360
WF BEAMS 12x40	35'	3	5	15	3200	9.600	217708
WF BEAMS 12x40	40'	7	5	35	3658	25.606	217704,217705,217707,217708
WF BEAMS 12x40	45'	3	5	15	4115	12.345	217704,217708
WF BEAMS 12x40	50'	4	5	20	4572	18.288	217704,217705
WF BEAMS 12x40	55'	2	5	10	5029	10.058	217708
WF BEAMS 12x40	60'	8	4	32	4389	35.112	217707,217708
WF BEAMS 12x45	40'	3	5	15	4084	12.252	217686
WF BEAMS 12x45	50'	2	5	10	5105	10.210	217686,217687
WF BEAMS 12x50	40'	3	6	16	4511	13.533	217682
WF BEAMS 12x50	60'	3	3	9	4060	12.180	217681,217682
WF BEAMS 14x22	35'	3	9	27	3159	9.477	216889,216890,216891,216892,216893
WF BEAMS 14x22	40'	4	9	36	3610	14.440	216610,217408,217409,217410,217411,217441,217442
WF BEAMS 14x22	45'	2	9	18	4061	8.122	216893,217413,217436,217438,217439,217440
WF BEAMS 14x22	55'	3	9	27	4964	14.892	217413,217414,217435,217436,217438
WF BEAMS 14x26	60'	2	7	14	4993	9.986	217403
WF BEAMS 16x36	40'	3	6	18	3877	11.631	217310
WF BEAMS 16x36	45'	2	6	12	4362	8.724	217307
WF BEAMS 16x40	40'	3	6	18	4389	13.167	216720,216735,217312
WF BEAMS 16x40	50'	2	5	10	4572	9.144	217312,217313
WF BEAMS 18x35	40'	5	7	35	4438	22.190	217125,217716,217717,217718,217719,217720
WF BEAMS 18x35	45'	2	7	14	4993	9.986	217720,217721,217722,217724
WF BEAMS 18x35	50'	4	6	24	4755	19.020	217722,217723,217724
WF BEAMS 18x35	55'	2	5	10	4359	8.718	217715,217716,217717,217718
WF BEAMS 18x35	60'	7	5	35	4755	33.285	217722,217723,217724

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SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
WF BEAMS 18x40	40'	2	7	14	5121	10.242	217115,217117
WF BEAMS 18x40	50'	2	5	10	4572	9.144	217713,217714,217715
WF BEAMS 18x40	60'	2	4	8	4389	8.778	217714,217715
WF BEAMS 18x46	50'	2	5	10	5182	10.364	217713
WF BEAMS 21x44	35'	1	6	6	4225	4.225	217398,217401,217405,217426,217427
WF BEAMS 21x44	45'	2	5	10	4526	9.052	217401,217402,217423,217426
WF BEAMS 21x44	55'	3	4	12	4426	13.278	217395,217397,217399,217426
WF BEAMS 21x44	60'	2	4	8	4828	9.656	217402,217403,217405,217406
WF BEAMS 24x55	40'	3	5	15	4999	14.997	217432,217433,217434,217439
WF BEAMS 24x55	45'	2	4	8	4499	8.998	217445,217446,217447,217449
WF BEAMS 24x55	50'	4	4	16	4999	19.996	217436,217437,217438,217439
WF BEAMS 24x55	55'	2	3	6	4124	8.248	217445,217446,217447,217448,217450
WF BEAMS 24x55	60'	7	3	21	4499	31.493	217438,217439,217440,217445
WF BEAMS 24x62	55'	2	3	6	4627	9.254	217431
WF BEAMS 24x68	50'	2	3	6	4618	9.236	217713
WF BEAMS 24x68	50'	1	2	2	3078	3.078	217712
WF BEAMS 24x68	60'	4	3	12	5541	22.164	217713,217714
WF BEAMS 24x84	40'	2	3	6	4572	9.144	217076,217707
WF BEAMS 8x18	40'	2	16	32	5189	10.378	217239,217240,217241
WF BEAMS 8x18	60'	2	10	20	4865	9.730	217241,217242
WF BEAMS 8x24	40'	2	10	20	4377	8.754	216615,216617,217544,217545,217546,217547,217548,217549,217550,217551,217552,217554
WF BEAMS 8x24	60'	2	8	16	5252	10.504	217545,217546,217552,217554
WF BEAMS 10x22	40'	2	12	24	4784	9.568	217560,217561,217563
WF BEAMS 12x26	40'	2	10	20	4718	9.436	217361,217362,217363,217368,217370
WF BEAMS 12x26	60'	2	6	12	4246	8.492	217368
WF BEAMS 14x22	40'	3	9	27	3610	10.830	216610,217408,217409,217410,217411,217441,217442

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WF BEAMS 14x22	50'	2	9	18	4513	9.028	217416,217435,217438,217439,217440,217441
WF BEAMS 14x22	55'	2	9	18	4964	9.928	217413,217414,217435,217436,217438
WF BEAMS 14x22	60'	2	8	16	4813	9.626	216889,216890,216891,216892,217415,217416,217417,217435
WF BEAMS 18x35	40'	2	7	14	4438	8.876	217125,217718,217717,217718,217719,217720
WF BEAMS 18x35	60'	2	5	10	4755	9.510	217722,217723,217724
WF BEAMS 18x40	40'	2	7	14	5121	10.242	217115,217117
WF BEAMS 21x44	60'	2	4	8	4828	9.656	217402,217403,217405,217406
WF BEAMS 24x55	40'	2	5	10	4999	9.998	217432,217433,217434,217439
WF BEAMS 24x55	60'	2	3	6	4499	8.998	217438,217439,217440,217445

TOTAL BUNDLES 305 TOTAL WEIGHT 1.356.744 Kg.

A02 EN 10204/3.1	CSA G40.21 50W/ASTM A572 G50/A992/A6-16a	(B01/B02/B03) A03 OLAP79070
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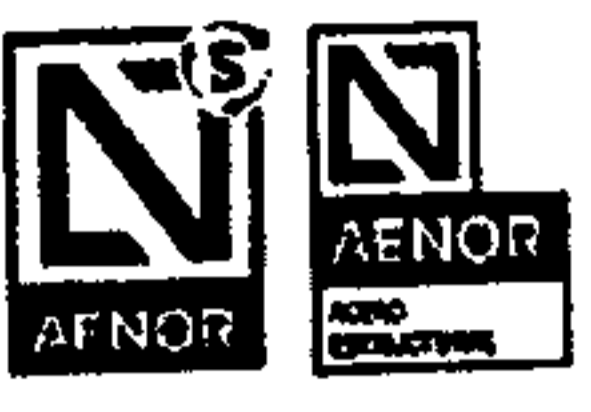


MILL TEST CERTIFICATE

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)														CEV				
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al						
216610	.068	.950	.190	.026	.025	.004	.130	.220	.030	.420	.030	.027	.002	.30					
216612	.064	.950	.210	.024	.027	.003	.120	.220	.031	.400	.028	.028	.003	.29					
216615	.079	.900	.190	.035	.022	.004	.220	.240	.042	.430	.029	.024	.003	.33					
216617	.073	.890	.190	.023	.018	.005	.170	.130	.028	.360	.029	.019	.004	.31					
216720	.081	.910	.230	.019	.022	.004	.120	.260	.049	.420	.029	.022	.003	.31					
216735	.069	.920	.220	.031	.023	.004	.190	.240	.044	.460	.026	.030	.003	.32					
216862	.068	.950	.230	.024	.029	.004	.130	.200	.045	.360	.026	.023	.003	.30					
216873	.081	.950	.220	.027	.021	.004	.120	.190	.033	.360	.029	.031	.003	.31					
216889	.072	.910	.190	.028	.021	.004	.140	.230	.043	.410	.029	.023	.001	.30					
216890	.079	.910	.210	.027	.021	.004	.110	.220	.042	.410	.066	.024	.002	.30					
216891	.062	.920	.190	.030	.022	.004	.120	.210	.035	.410	.033	.025	.002	.31					
216892	.080	.930	.160	.032	.021	.005	.150	.200	.042	.400	.037	.025	.001	.31					
216893	.081	.860	.210	.025	.021	.005	.180	.220	.042	.450	.033	.024	.003	.31					
217076	.069	.950	.200	.024	.029	.004	.140	.250	.057	.350	.030	.023	.002	.31					
217115	.071	.930	.210	.032	.022	.003	.150	.220	.034	.400	.030	.025	.002	.30					
217117	.093	.900	.210	.028	.020	.003	.130	.200	.031	.390	.025	.027	.002	.32					
217125	.068	.910	.190	.024	.022	.003	.130	.210	.041	.400	.025	.025	.001	.30					
217239	.075	.950	.210	.019	.021	.004	.190	.250	.043	.330	.030	.019	.001	.32					
217240	.085	1.010	.210	.028	.020	.004	.250	.240	.047	.350	.030	.021	.001	.35					
217241	.075	.950	.200	.029	.022	.003	.190	.240	.047	.360	.026	.022	.001	.32					
217242	.070	.920	.190	.025	.024	.003	.160	.240	.038	.350	.028	.026	.001	.30					
217248	.069	.840	.200	.029	.024	.004	.160	.230	.045	.400	.027	.029	.002	.31					
217249	.074	.840	.220	.032	.023	.004	.150	.230	.044	.380	.029	.027	.002	.31					
217307	.073	.860	.180	.025	.020	.005	.170	.180	.030	.370	.028	.024	.001	.31					
217310	.090	.880	.220	.019	.025	.004	.100	.150	.018	.330	.028	.022	.003	.29					
217312	.068	.910	.180	.018	.026	.004	.090	.160	.022	.330	.024	.021	.001	.28					
217313	.068	.910	.210	.017	.022	.003	.090	.230	.043	.330	.024	.022	.002	.28					
217316	.052	.940	.210	.025	.025	.003	.130	.170	.036	.350	.027	.025	.002	.28					
217317	.080	.930	.230	.029	.024	.003	.140	.190	.041	.350	.028	.021	.003	.31					
217318	.083	.930	.230	.033	.025	.004	.150	.180	.043	.330	.030	.019	.003	.31					
217319	.079	.950	.220	.024	.026	.004	.160	.190	.044	.320	.031	.018	.003	.31					
217320	.088	.970	.200	.029	.027	.005	.160	.190	.036	.350	.034	.023	.002	.33					
217321	.078	.930	.220	.027	.026	.004	.140	.210	.049	.360	.031	.024	.003	.31					
217323	.083	.930	.230	.027	.022	.003	.120	.170	.029	.330	.028	.027	.003	.30					
217324	.094	.950	.190	.024	.020	.006	.140	.220	.033	.430	.033	.027	.001	.33					
217360	.088	1.020	.250	.022	.020	.004	.280	.260	.051	.410	.024	.027	.003	.37					
217361	.081	.970	.200	.020	.021	.004	.250	.270	.048	.380	.027	.023	.001	.35					
217362	.077	.930	.210	.025	.020	.004	.230	.280	.044	.420	.030	.022	.003	.33					
217363	.088	.910	.240	.023	.022	.004	.200	.240	.038	.380	.026	.022	.002	.33					
217367	.064	.910	.190	.023	.022	.005	.150	.180	.038	.390	.027	.024	.001	.29					
217368	.077	.940	.230	.031	.030	.004	.200	.200	.042	.530	.031	.027	.002	.33					
217369	.068	.880	.190	.027	.023	.003	.140	.180	.039	.310	.027	.022	.002	.28					
217370	.081	.920	.200	.022	.025	.004	.160	.240	.047	.270	.029	.025	.003	.31					

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)																		
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al	CEV					
217395	.080	1.000	.190	.023	.022	.004	.140	.210	.044	.330	.028	.028	.001	.32					
217397	.082	.960	.200	.023	.021	.005	.170	.270	.054	.330	.027	.030	.002	.33					
217398	.068	.980	.190	.020	.024	.005	.100	.250	.046	.320	.031	.029	.001	.30					
217399	.066	.970	.180	.024	.025	.004	.080	.190	.035	.320	.032	.028	.001	.29					
217401	.058	.930	.210	.020	.024	.003	.110	.220	.044	.280	.026	.031	.002	.28					
217402	.057	.940	.220	.030	.026	.003	.160	.210	.039	.350	.025	.032	.002	.29					
217403	.055	.990	.210	.024	.021	.004	.170	.180	.029	.340	.031	.029	.001	.30					
217405	.056	1.020	.200	.024	.024	.004	.190	.210	.035	.340	.031	.028	.002	.31					
217406	.068	.980	.220	.022	.022	.003	.150	.230	.033	.380	.027	.023	.003	.31					
217408	.103	.970	.190	.033	.020	.005	.210	.280	.042	.430	.027	.029	.002	.36					
217409	.075	1.000	.210	.026	.021	.004	.200	.240	.035	.360	.029	.025	.001	.33					
217410	.072	1.010	.220	.025	.021	.004	.190	.260	.049	.420	.033	.026	.001	.33					
217411	.073	.900	.200	.025	.021	.004	.160	.290	.050	.370	.026	.027	.001	.31					
217413	.065	.900	.190	.027	.019	.004	.150	.240	.041	.330	.025	.023	.001	.29					
217414	.077	.910	.200	.021	.019	.003	.120	.240	.038	.350	.025	.027	.001	.30					
217415	.072	.900	.190	.020	.020	.003	.100	.260	.044	.350	.025	.026	.001	.29					
217416	.068	.900	.190	.022	.020	.003	.100	.240	.041	.350	.026	.032	.001	.28					
217417	.068	.930	.200	.023	.019	.003	.110	.220	.039	.370	.026	.032	.001	.29					
217423	.080	.970	.230	.023	.022	.005	.180	.230	.038	.340	.030	.028	.002	.32					
217424	.068	.990	.210	.022	.022	.004	.160	.180	.028	.350	.029	.027	.002	.31					
217426	.065	.970	.190	.030	.023	.005	.170	.240	.043	.340	.029	.023	.001	.31					
217427	.067	.940	.200	.026	.022	.004	.180	.250	.040	.350	.026	.022	.001	.30					
217431	.070	.960	.190	.022	.021	.004	.160	.210	.031	.340	.027	.025	.002	.31					
217432	.063	.980	.190	.023	.021	.003	.150	.220	.040	.390	.026	.027	.002	.31					
217433	.071	.930	.210	.024	.021	.005	.150	.220	.040	.400	.028	.032	.002	.31					
217434	.067	.970	.200	.024	.021	.004	.160	.200	.039	.390	.027	.028	.002	.31					
217435	.070	.990	.190	.025	.022	.005	.170	.210	.041	.370	.029	.027	.002	.32					
217436	.080	.970	.220	.023	.021	.004	.160	.260	.041	.380	.028	.027	.002	.32					
217437	.066	1.050	.180	.029	.020	.004	.140	.200	.029	.340	.029	.027	.002	.31					
217438	.077	.980	.180	.028	.019	.004	.140	.200	.034	.340	.027	.023	.001	.30					
217439	.065	.940	.220	.027	.020	.004	.140	.230	.034	.340	.027	.023	.001	.30					
217440	.063	.930	.190	.026	.020	.004	.130	.220	.041	.350	.026	.024	.001	.29					
217441	.073	.930	.230	.028	.020	.004	.140	.240	.038	.430	.026	.026	.002	.31					
217442	.083	.920	.240	.025	.020	.004	.150	.240	.041	.380	.027	.023	.002	.32					
217445	.075	.920	.190	.023	.021	.004	.130	.240	.040	.320	.026	.024	.001	.30					
217446	.073	.890	.210	.023	.023	.003	.140	.240	.038	.320	.026	.023	.001	.29					
217447	.065	.940	.230	.024	.022	.004	.150	.220	.045	.340	.026	.025	.002	.30					
217448	.060	.940	.220	.024	.022	.004	.140	.230	.045	.340	.026	.027	.002	.29					
217449	.062	.940	.210	.024	.024	.004	.150	.260	.049	.330	.026	.026	.002	.30					
217450	.068	.960	.210	.029	.022	.005	.150	.220	.043	.350	.028	.026	.001	.31					
217455	.059	.960	.210	.027	.024	.005	.150	.200	.035	.380	.031	.026	.002	.30					
217458	.067	1.010	.210	.034	.020	.005	.210	.190	.031	.490	.030	.025	.003	.33					
217459	.062	.990	.210	.029	.022	.004	.150	.220	.034	.460	.029	.025	.002	.31					

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MILL TEST CERTIFICATE

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)													
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al	CEV
217461	.072	.980	.200	.024	.021	.004	.180	.190	.032	.390	.026	.027	.003	.32
217521	.078	1.000	.200	.021	.020	.004	.150	.180	.027	.350	.030	.028	.001	.32
217524	.069	.970	.220	.029	.022	.003	.130	.180	.037	.330	.026	.028	.002	.30
217541	.066	.930	.220	.023	.029	.004	.120	.190	.037	.360	.025	.025	.001	.29
217542	.063	.920	.210	.020	.025	.004	.120	.200	.036	.330	.027	.027	.001	.28
217543	.081	.860	.200	.021	.026	.004	.130	.230	.029	.330	.032	.030	.001	.31
217544	.079	.950	.200	.021	.028	.004	.120	.210	.034	.320	.032	.026	.001	.30
217545	.069	.960	.200	.022	.029	.005	.140	.220	.040	.300	.029	.028	.001	.30
217546	.077	.970	.190	.023	.030	.006	.150	.210	.038	.330	.033	.026	.001	.31
217547	.082	.860	.200	.022	.029	.006	.150	.200	.032	.310	.032	.027	.001	.31
217548	.061	.930	.250	.022	.024	.004	.120	.190	.041	.350	.028	.030	.001	.29
217549	.056	.990	.250	.022	.031	.004	.140	.200	.040	.320	.027	.027	.002	.29
217550	.063	.960	.220	.023	.028	.003	.140	.190	.040	.290	.024	.027	.003	.29
217551	.070	.940	.230	.022	.027	.004	.130	.170	.037	.310	.025	.022	.003	.29
217552	.067	.950	.210	.021	.028	.004	.110	.190	.038	.460	.026	.024	.002	.30
217554	.069	.990	.220	.022	.026	.005	.110	.180	.042	.300	.031	.021	.001	.30
217555	.069	.970	.210	.020	.022	.004	.110	.180	.049	.310	.029	.021	.002	.30
217556	.074	1.010	.210	.021	.025	.003	.100	.180	.042	.300	.031	.018	.002	.30
217557	.072	.950	.220	.019	.028	.003	.080	.210	.040	.330	.029	.017	.002	.29
217558	.078	.950	.220	.019	.028	.004	.090	.200	.038	.330	.030	.017	.001	.30
217559	.087	.960	.220	.020	.027	.004	.080	.160	.030	.260	.029	.019	.002	.28
217560	.082	.980	.220	.021	.025	.005	.080	.160	.025	.320	.033	.022	.002	.30
217561	.076	.850	.210	.019	.024	.004	.080	.170	.024	.300	.029	.025	.001	.29
217562	.076	.940	.220	.022	.025	.004	.080	.220	.035	.300	.029	.027	.001	.29
217563	.076	.950	.230	.025	.028	.004	.090	.240	.040	.440	.030	.027	.002	.31
217565	.072	.980	.200	.019	.020	.004	.090	.170	.024	.260	.030	.023	.001	.29
217681	.060	.970	.210	.022	.021	.002	.140	.290	.044	.350	.027	.030	.004	.30
217682	.061	.970	.200	.019	.022	.001	.110	.220	.036	.320	.028	.031	.003	.29
217686	.069	.980	.200	.021	.021	.002	.110	.250	.042	.390	.029	.030	.004	.31
217687	.069	.980	.220	.020	.022	.001	.100	.210	.037	.370	.028	.028	.004	.30
217704	.076	.890	.210	.017	.019	.001	.100	.190	.033	.340	.025	.020	.003	.29
217705	.075	.890	.200	.020	.020	.001	.090	.200	.037	.330	.026	.025	.003	.28
217707	.087	.940	.220	.022	.020	.002	.100	.170	.033	.360	.037	.024	.004	.31
217708	.075	.920	.210	.022	.021	.002	.090	.170	.031	.370	.031	.025	.005	.29
217712	.075	1.030	.210	.020	.019	.004	.100	.180	.023	.340	.042	.024	.002	.31
217713	.078	1.030	.200	.021	.020	.003	.100	.190	.024	.460	.039	.023	.002	.32
217714	.078	1.060	.190	.020	.020	.004	.110	.220	.032	.390	.040	.025	.001	.32
217715	.062	1.010	.230	.019	.020	.003	.120	.190	.043	.360	.031	.024	.003	.30
217716	.068	.980	.230	.024	.022	.003	.130	.200	.049	.390	.032	.024	.003	.31
217717	.051	.920	.200	.022	.022	.003	.120	.190	.030	.370	.026	.025	.003	.27
217718	.060	.930	.200	.022	.021	.003	.120	.180	.032	.410	.028	.027	.002	.29
217719	.092	.970	.210	.019	.021	.004	.120	.190	.042	.380	.029	.033	.002	.32
217720	.072	.980	.170	.020	.021	.003	.130	.180	.038	.360	.028	.028	.001	.31

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MILL TEST CERTIFICATE

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COLADA HEAT	COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)																
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al	CEV			
217721	.068	.960	.200	.023	.021	.004	.150	.160	.039	.410	.031	.033	.002	.30			
217722	.058	.980	.200	.026	.020	.003	.170	.180	.034	.420	.031	.026	.002	.30			
217723	.063	.990	.190	.026	.020	.004	.180	.180	.029	.410	.034	.023	.002	.31			
217724	.063	.950	.220	.020	.019	.003	.140	.180	.026	.390	.029	.026	.003	.29			

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8"	
EN	EN	C11	C12	C12	C12	C13	C13
W-10x12	217557	435	435	546	524	24,9	24,5
W-10x12	217559	422	408	525	507	33,4	32,3
W-10x12	217562	436	424	543	519	29,6	29,5
W-10x12	217563	422	408	530	528	30,5	30,2
W-10x12	217565	425	421	528	516	28,4	28,1
W-10x22	217560	419	417	537	536	26,9	26,8
W-10x22	217561	419	409	529	527	26,3	25,8
W-10x22	217562	407	405	527	517	26,7	26,
W-10x22	217563	417	405	543	523	26,7	25,7
W-10x26	216873	390	384	505	499	24,9	24,8
W-10x26	217557	430	420	537	528	26,3	26,
W-10x26	217558	420	404	535	515	27,	26,1
W-10x30	217369	416	409	529	527	25,8	25,2
W-10x30	217524	411	406	529	527	26,4	25,5
W-10x33	217316	414	402	513	507	26,2	25,8
W-10x33	217317	448	438	535	515	26,8	25,8
W-10x33	217318	409	405	498	498	26,4	25,9
W-10x33	217319	406	406	519	505	26,7	26,3
W-10x39	217320	398	394	499	495	26,	25,9
W-10x39	217321	395	388	511	501	26,5	26,
W-10x45	217323	384	378	508	486	26,7	25,9
W-10x45	217324	394	384	501	499	26,5	25,5
W-12x14	217545	440	436	541	531	22,9	22,1
W-12x14	217546	432	424	532	528	22,6	22,1
W-12x14	217547	417	405	513	507	22,9	22,1
W-12x16	217550	421	412	515	499	22,8	22,5
W-12x16	217551	429	419	528	504	23,8	23,1
W-12x19	217458	398	390	560	536	27,9	27,5
W-12x19	217459	401	385	566	552	28,8	28,2
W-12x19	217461	388	372	498	486	28,7	27,6
W-12x19	217521	425	415	552	528	30,4	29,5
W-12x19	217543	438	434	536	532	22,8	22,1
W-12x19	217544	419	411	525	521	22,5	22,3
W-12x22	217455	420	414	533	523	31,	30,6
W-12x26	217361	394	384	508	501	27,5	26,7

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8"	
		ET1	ET2	CT1	CT2	ET1	ET2
W-12x26	217362	445	427	548	536	26.3	25.9
W-12x26	217363	408	403	513	502	26.5	26.1
W-12x26	217367	413	399	511	499	26.3	25.6
W-12x26	217368	414	406	517	505	27.4	26.4
W-12x26	217370	408	406	516	506	27.2	26.5
W-12x30	216862	410	405	527	505	24.4	24.4
W-12x30	217361	399	393	510	500	26.8	26.3
W-12x35	217360	398	384	543	525	27.2	26.7
W-12x40	217704	397	393	520	507	24.7	24.1
W-12x40	217705	396	381	496	489	24.7	24.1
W-12x40	217707	410	396	507	507	24.8	24.2
W-12x40	217708	409	399	515	508	24.7	24.5
W-12x45	217686	395	382	495	484	25.2	24.6
W-12x45	217687	406	402	510	510	25.1	24.8
W-12x50	217681	384	382	510	488	25.3	24.9
W-12x50	217682	386	386	504	482	25.1	24.4
W-14x22	216610	421	411	519	501	23.4	22.7
W-14x22	216889	402	394	519	499	26.2	25.4
W-14x22	216890	444	448	552	550	27.1	26.2
W-14x22	216891	421	405	527	527	25.6	25.6
W-14x22	216892	434	426	553	535	27.3	26.9
W-14x22	216893	428	426	526	508	26.5	26.2
W-14x22	217408	384	390	510	501	23.8	23.7
W-14x22	217409	404	402	501	494	23.6	23.3
W-14x22	217410	377	361	525	503	23.8	23.4
W-14x22	217411	418	416	544	528	28.1	30.1
W-14x22	217413	398	396	518	518	26.7	26.6
W-14x22	217414	416	400	528	520	26.5	26.4
W-14x22	217415	399	397	508	504	26.7	26.5
W-14x22	217416	430	418	536	527	26.8	26.3
W-14x22	217417	418	406	519	519	26.5	26.1
W-14x22	217435	400	395	513	503	27.1	26.4
W-14x22	217436	410	386	514	512	26.9	26.5
W-14x22	217438	396	385	512	502	26.8	26.5
W-14x22	217439	403	386	508	506	27.1	26.1
W-14x22	217440	410	408	540	520	26.9	26.4
W-14x22	217441	405	401	525	513	27.1	26.1
W-14x22	217442	408	398	533	513	26.1	25.9
W-14x26	217403	438	421	540	525	29.7	29.1
W-16x36	217307	403	368	492	491	26.4	33.5
W-16x36	217310	436	422	543	535	27.1	26.1
W-16x40	216720	399	396	516	506	25.9	25.5
W-16x40	216735	401	389	511	505	25.8	25.3

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MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8"	
		389	385	492	491	25,7	32,
W-16x40	217312	389	379	488	472	26,3	26,
W-16x40	217313	389	379	488	472	26,3	26,
W-16x40	217313	389	379	488	472	26,3	26,
W-18x35	217125	408	398	503	503	30,5	30,5
W-18x35	217715	421	417	538	514	24,9	24,4
W-18x35	217716	412	398	511	500	24,8	23,9
W-18x35	217717	418	400	512	496	24,5	23,7
W-18x35	217717	418	400	512	496	24,5	23,7
W-18x35	217718	429	415	538	519	23,4	23,1
W-18x35	217718	429	415	538	519	23,4	23,1
W-18x35	217719	411	405	521	499	24,9	24,
W-18x35	217720	394	378	498	484	25,	24,2
W-18x35	217720	394	378	498	484	25,	24,2
W-18x35	217721	423	411	530	506	24,4	23,7
W-18x35	217721	423	411	530	506	24,4	23,7
W-18x35	217722	406	392	505	501	24,2	23,6
W-18x35	217722	406	392	505	501	24,2	23,6
W-18x35	217723	414	405	515	501	24,5	23,9
W-18x35	217723	414	405	515	501	24,5	23,9
W-18x35	217724	410	398	504	490	26,	25,3
W-18x40	217115	393	387	509	509	30,2	32,9
W-18x40	217117	403	387	525	509	33,1	32,9
W-18x40	217713	401	391	508	501	24,8	24,1
W-18x40	217714	427	409	527	507	24,7	24,4
W-18x40	217715	410	402	509	499	25,2	24,6
W-18x40	217715	410	402	509	499	25,2	24,6
W-18x40	217713	403	387	508	500	25,6	24,6
W-18x46	217713	403	387	508	500	25,6	24,6
W-21x44	217395	428	419	532	522	26,3	25,7
W-21x44	217397	435	419	534	518	25,9	25,5
W-21x44	217398	419	405	514	498	27,1	26,2
W-21x44	217398	419	405	514	498	27,1	26,2
W-21x44	217399	406	400	504	500	26,9	26,2
W-21x44	217401	416	414	518	501	27,	26,5
W-21x44	217402	434	434	540	532	28,4	26,1
W-21x44	217402	434	434	540	532	28,4	26,1
W-21x44	217403	422	422	521	499	27,1	26,6
W-21x44	217403	422	422	521	499	27,1	26,6
W-21x44	217405	418	413	522	508	25,9	25,3
W-21x44	217405	418	413	522	508	25,9	25,3
W-21x44	217406	420	406	509	503	26,8	26,3
W-21x44	217406	420	406	509	503	26,8	26,3
W-21x44	217423	419	417	513	499	27,1	26,1
W-21x44	217423	419	417	513	499	27,1	26,1
W-21x44	217426	415	403	502	498	26,9	26,2
W-21x44	217426	415	403	502	498	26,9	26,2
W-21x44	217427	424	420	523	505	26,6	26,5
W-21x44	217427	424	420	523	505	26,6	26,5
W-24x55	217432	408	403	500	497	23,2	23,1
W-24x55	217432	408	403	500	497	23,2	23,1
W-24x55	217433	416	406	505	495	23,2	22,7
W-24x55	217433	416	406	505	495	23,2	22,7
W-24x55	217434	406	398	504	496	24,7	24,
W-24x55	217434	406	398	504	496	24,7	24,
W-24x55	217436	420	418	526	518	24,4	24,2
W-24x55	217436	420	418	526	518	24,4	24,2
W-24x55	217437	394	378	504	490	24,4	23,6
W-24x55	217437	394	378	504	490	24,4	23,6
W-24x55	217438	398	392	501	489	24,9	24,3
W-24x55	217438	398	392	501	489	24,9	24,3
W-24x55	217439	411	398	505	494	25,4	24,9
W-24x55	217439	411	398	505	494	25,4	24,9
W-24x55	217440	414	400	513	493	23,5	23,1
W-24x55	217440	414	400	513	493	23,5	23,1
W-24x55	217445	400	389	499	481	27,	26,7
W-24x55	217445	400	389	499	481	27,	26,7
W-24x55	217446	403	389	489	491	27,	26,1
W-24x55	217446	403	389	489	491	27,	26,1
W-24x55	217447	405	387	503	489	26,9	26,2
W-24x55	217447	405	387	503	489	26,9	26,2
W-24x55	217448	409	397	506	488	26,8	26,3
W-24x55	217448	409	397	506	488	26,8	26,3

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 TELEF. (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

OLA P-79070

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		ReH MPa		Rm MPa		A% LO=8"	
		σ ₁₁₁	σ ₁₁₂	σ ₁₁₁	σ ₁₁₂	σ ₁₁	σ ₁₂
W-24x55	217449	406	400	507	497	26.5	25.8
W-24x55	217450	407	399	505	489	27.1	26.6
W-24x55	217431	416	406	499	489	33.6	32.7
W-24x62	217712	417	403	522	500	25.5	24.8
W-24x68	217713	415	415	516	511	25.1	24.6
W-24x68	217714	424	418	536	518	26.3	25.6
W-24x68	217076	404	393	525	511	26.1	25.4
W-24x84	217707	406	398	502	494	25.5	25.1
W-24x84	217424	398	390	493	491	33.1	32.2
W-6x20	217239	380	380	540	522	26.4	26.3
W-8x18	217240	382	385	525	512	26.5	25.8
W-8x18	217241	398	396	532	517	26.1	25.4
W-8x18	217242	406	396	511	504	26.	25.6
W-8x18	217242	398	395	511	507	26.1	26.9
W-8x21	217248	381	389	495	509	26.7	26.4
W-8x21	217249	411	396	519	480	26.	25.2
W-8x24	216615	382	376	480	480	25.8	25.6
W-8x24	216617	402	390	498	494	30.2	29.9
W-8x24	217544	398	394	516	498	30.7	29.6
W-8x24	217545	406	396	519	515	26.1	25.6
W-8x24	217546	376	369	494	490	30.7	29.6
W-8x24	217547	410	398	522	512	29.5	29.4
W-8x24	217548	414	398	520	506	29.8	29.5
W-8x24	217549	395	385	496	496	26.7	25.7
W-8x24	217550	383	379	503	493	26.9	26.2
W-8x24	217551	397	381	504	500	29.6	29.6
W-8x24	217552	403	399	523	505	26.2	26.1
W-8x24	217554	404	398	507	501	26.6	26.5
W-8x24	217555	409	407	517	516	26.2	26.5
W-8x24	217556	431	425	536	516	25.9	25.4
W-8x28	216612	369	363	480	480	30.5	29.5
W-8x28	217541	382	374	494	490	26.5	26.5
W-8x28	217542	382	383	496	491	29.7	29.5
W-8x28	217543	388	376	505	497		

133 análisis
 DD1: Certificamos que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.
 B08, Marca AMO

Responsable del Departamento de Calidad 201

Jose Maria Galindo
 Jose Maria Galindo