



# ACESITA S.A. ASSOCIADA À ARCELOR

Plant: Praca 1º de Maio, nº 9 - Centro - Timoteo - MG - 35180-018 - Brazil

Head Office: Av. João Pinheiro, nº 580 - Centro - Belo Horizonte - MG - 30130-180 - Brazil

## QUALITY CERTIFICATE

Number: 62938  
 Invoice: **A6423** E401481  
 Date: 15/06/2004  
 ACESITA Order: 9599101

**Customer:**  
 DUFERCO S.A  
 VIA BAGUTTI 9  
 CH-6900 - LUGANO  
 P.O.NR.: ORDEM 2

Part Number: ASTM A 36/A 36M

**Steel grade:** ACE P016N      **Finish:** HOT ROLLED      **Product:** COIL  
**Dimensions:** 7,92 mm x 1220 mm  
**Marks:**

### Chemical composition

Heat nr.	C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	Al %						DI mm
402658I	0,160	0,74	0,100	0,014	0,003	0,10	0,02	0,007	0,0503						15,03
402659G	0,160	0,76	0,100	0,012	0,003	0,08	0,02	0,008	0,0440						14,74

### Results

Test/Variable	Unit	402658I03 ✓		402658I04 ✓		402658I09 ✓		402659G02		402659G03		402659G05 ✓	
		H	T	H	T	H	T	H	T	H	T	H	T
Tensile Strength	MPA		490,00		490,00		490,00		496,00		496,00		496,00
Yield Strength 0.2 %	MPA		347,00		347,00		347,00		335,00		335,00		335,00
Elongation 2"	%		31,00		31,00		31,00		27,40		27,40		27,40
Grain Size			07/08		07/08		07/08		07/08		07/08		07/08
Hardness	HRB	080	080	080	080	080	080	081	081	081	081	081	081
Structure		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE	
Crown	mm	0,026		0,025		0,025		0,033		0,036		0,037	
Wedge	mm	0,01		0,015		0,033		0,034		0,032		0,054	
Std. Deviation	mm	0,02		0,01		0,02		0,02		0,02		0,02	
Width	mm	1238,50		1220,00		1239,70		1241,00		1240,10		1237,40	
Net Weight	MT	19,680		19,680		19,780		19,700		19,570		14,220	
Gross Weight	MT	19,680		19,680		19,780		19,700		19,570		14,220	

**Heat & Lot Identification:** Ok  
**Surface quality / dimensions:** Ok

**Remarks:** ASTM A 36/A 36M.

Free from mercury contamination.  
 Certify that the results above are correct and in acc. with the specifications or accepted concession.  
 Quality management system certified ABS QE no. 30071 acc to AD2000 W2/W10; ISO 9001:2000.  
 Environmental management system certified ABS QE no. 65989 acc to ISO 14001.

*Castro*  
 Geovane Martins Castro  
 Qualified Inspector  
 ACESITA S.A.

**QUALITY CERTIFICATE**
**Number:** 62940  
**Invoice:** E401481  
**Date:** 15/06/2004  
**ACESITA Order:** 9599127

**Customer:**  
 DUFERCO S.A  
 VIA BAGUTTI 9  
 CH-6900 - LUGANO  
 P.O.NR.: ORDEM 2

Part Number: ASTM A 36/A 36M

**Steel grade:** ACE P016N      **Finish:** HOT ROLLED      **Product:** COIL  
**Dimensions:** 12,70 mm x 1220 mm  
**Marks:**
**Chemical composition**

Heat nr.	C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	Al %						DI mm
402644I	0,152	0,77	0,110	0,014	0,002	0,09	0,03	0,009	0,0461						15,05
402645F	0,151	0,73	0,110	0,014	0,004	0,11	0,03	0,008	0,0426						15,11

**Results**

Test/Variable	Unit	402644I02		402645F02 ✓		402645F03 ✓		402645F04		402645F08			
		H	T	H	T	H	T	H	T	H	T	H	T
		Tensile Strength	MPA		471,00		498,00		498,00		498,00		498,00
Yield Strength 0.2 %	MPA		328,00		357,00		357,00		357,00		357,00		
Elongation 2"	%		36,90		30,00		30,00		30,00		30,00		
Grain Size			07/08		08/08		08/08		08/08		08/08		
Hardness	HRB	082	082	080	080	080	080	080	080	080	080		
Structure		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE		FERRITE-PEARLITE			
Crown	mm	-0,005		-0,006		-0,009		-0,01		-0,02			
Wedge	mm	0,033		0,021		0,021		-0,006		-0,02			
Std. Deviation	mm	0,05		0,03		0,04		0,11		0,04			
Width	mm	1243,50		1241,70		1243,40		1245,20		1243,40			
Net Weight	MT	19,320		19,690		19,670		19,830		19,630			
Gross Weight	MT	19,320		19,690		19,670		19,830		19,630			

**Heat & Lot identification:** Ok  
**Surface quality / dimensions:** Ok

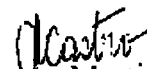
**Remarks:** ASTM A 36/A 36M.

Free from mercury contamination.

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