



TRINECKÉ ŽELEZÁŘNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Czech republic

MARTINS FERREIRA COMERCIO DE
PRODUTOS SIDERURGICOS SA
LUGAR DE VILA NOVA-NOGUEIRA
4701-959 BRAGA
Portugal

Ihr Auftrag - Your order:
09/2005 - MF

Werks Nr. - Our order:
3300030381 / 000010
0041028350 / 24

Aviso - Advise note:
oder/or

Waggon No:

EU-Lieferschein Nr.-Delivery note:
06/01/003455/02 28.01.2006

8154-3942665-2

Abnahmeprüfzeugnis 3.1- Inspection certificate 3.1, EN 10204:2004

Lieferung - Delivery	Gewicht - Weight	Güte - Grade	Norm - Standard
REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-003/2004 16 mm 12,000 m	42.092 kg	A400NR	LNEC E 449-98

CHEMISCHE ZUSAMMENSETZUNG - CHEMICAL ANALYSIS [%]

Schmelze Heat No	Gewicht Mass [kg]							
T10686	12024	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.19	0.71	0.13	0.017	0.024	0.0035	0.33
T10691	30068	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.19	0.74	0.13	0.017	0.023	0.0047	0.34

MECHANISCHE WERTE - MECHANICAL VALUES

Schmelze Heat No	Streckgrenze Yield point R [MPa]	Zugfestigkeit Tensile strength Rm [Mpa]	Bruchdehnung Elongation A5 [%]	EXTENSION Agt (%)	Schlagarbeit Energy of impact KV [J]/KCV [J/cm2]			
T10686	512 502	565 577	24,0 25,6	10,5 12,3				
T10691	537 545	632 629	23,5 24,8	10,3 11,1				

BEND TESTS FULFIED THE REQUIRED CONDITIONS
WARMLY MANUFACTURED



DIE RADIOISOTOPISCHEAKTIVITÄT MAX. 100 BQ/KG WURDE EINGEHALTET
RADIO - ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE, IT WAS NO HIGHER THAN 100 BQ/KG.



Die obengenannten Erzeugnisse entsprechen den Bestellangsvorschriften - Products conform with the prescription of order.

Der Werksachverständige - Expert: Ručka Miroslav, Der Leiter der Qualitätskontrolle für Freigabe und Atteste
Manager of Quality Inspection of Realising and Attesting

Třinec: 30.01.2006



TRINECKÉ ŽELEZÁŘNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Czech republic

MARTINS FERREIRA COMERCIO DE
PRODUTOS SIDERURGICOS SA
LUGAR DE VILA NOVA-NOGUEIRA
4701-959 BRAGA
Portugal

Ihr Auftrag - Your order:
09/2005 - MF

Werks Nr. - Our order:
3300030379 / 000010
0041028350 / 24

Aviso - Advise note:
oder/or

Waggon No:

EU-Lieferschein Nr.-Delivery note:
06/02/000266/02 02.02.2006

3154-5955690-0

Abnahmeprüfzeugnis 3.1- Inspection certificate 3.1, EN 10204:2004

Lieferung - Delivery	Gewicht - Weight	Güte - Grade	Norm - Standard
REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-003/2004 10 mm 12,000 m	46.915 kg	A400NR	LNEC E 449-98

CHEMISCHE ZUSAMMENSETZUNG - CHEMICAL ANALYSIS [%]

Schmelze Heat No	Gewicht Mass [kg]							
T11241	21435	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.18	0.72	0.12	0.029	0.025	0.0027	0.33
T11243	25480	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.17	0.68	0.11	0.022	0.023	0.0039	0.30

MECHANISCHE WERTE - MECHANICAL VALUES

Schmelze Heat No	Streckgrenze Yield point R [MPa]	Zugfestigkeit Tensile strength Rm [Mpa]	Bruchdehnung Elongation A5 [%]	EXTENSION Agt (%)	Schlagarbeit Energy of impact KV [J]/KCV [J/cm2]		
T11241	497	586	24,6	9,2			
	528	605	22,8	7,5			
T11243	465	547	28,6	8,0			
	433	522	26,8	14,5			

BEND TESTS FULFILLED THE REQUIRED CONDITIONS
WARMLY MANUFACTURED



DIE RADIOISOTOPISCHEAKTIVITÄT MAX. 100 BQ/KG WURDE EINGEHALTET
RADIO - ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE, IT WAS NO HIGHER THAN 100 BQ/KG.



Die obengenannten Erzeugnisse entsprechen den Bestimmungsvorschriften - Products conform with the prescription of order.

Der Werksachverständige - Expert:

Rucka Miroslav Der Leiter der Qualitätskontrolle für Freigabe und Atteste

Třinec : 03.02.2006

unabhängiger technischer Vertreter
nezavislý odborný zástupce

Manager of Quality Inspection of Realising and Attesting



TRINECKÉ ŽELEZÁŘNY

Number: 2006/11/000177-GRE

TRINECKÉ ŽELEZÁŘNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Czech republic

Nordesfer - Armazanes de Ferro, S.A.

Ihr Auftrag - Your order:

Werks Nr. - Our order:

Lugar da Ribela-S. Pedro de Avioso
4471-908 Santa Maria do Avioso - Maia
Portugal

PC/947

3300050177 / 000010

Aviso - Advise note:

0041050493 / 24

oder/for

Waggon No:

EU-Lieferschein Nr.-Delivery note:

06/10/004349/02 31.10.2006

3154-5959587-4

Abnahmeprüfzeugnis 3.1- Inspection certificate 3.1, EN 10204:2004

Lieferung - Delivery	Gewicht - Weight	Güte - Grade	Norm - Standard
REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-D03/2004 12 mm 12,000 m	17.875 kg	A400NR	LNEC E 449-98

CHEMISCHE ZUSAMMENSETZUNG - CHEMICAL ANALYSIS [%]

Schmelze Heat No	Gewicht Mass [kg]							
T20933	11255	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.16	0.67	0.07	0.017	0.031	0.0053	0.29
T20937	6620	C	MN	SI	P	S	N	CEQ
BO- cc billets		0.17	0.71	0.07	0.017	0.022	0.0048	0.31

MECHANISCHE WERTE - MECHANICAL VALUES

Schmelze Heat No	Streckgrenze Yield point R [MPa]	Zugfestigkeit Tensile strength Rm [Mpa]	Bruchdehnung Elongation A5 [%]	EXTENSION Agt (%)	Schlagarbeit Energy of impact KV [J]/KCV [J/cm2]			
T20933	486	548	26,7	8,3				
	508	566	24,3	7,8				
T20937	513	581	20,3	7,7				
	513	584	24,0	6,6				

BEND TESTS FULFIED THE REQUIRED CONDITIONS
WARMLY MANUFACTURED

DIE RADIOISOTOPISCHEAKTIVITÄT MAX. 100 BQ/KG WURDE EINGEHALTET
RADIO - ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE, IT WAS NO HIGHER THAN 100 BQ/KG.Miroslav Ručka
independent authorized agent
nezávislý oprávněný zastupce

Die obengenannten Erzeugnisse entsprechen den Bestimmungsvorschriften - Products conform with the prescription of order.

Der Werksachverständige - Expert: Ručka Miroslav, Der Leiter der Qualitätskontrolle für Freigabe und Atteste
Manager of Quality Inspection of Realising and Attesting

Třinec: 01.11.2006



TRINECKÉ ŽELEZÁŘNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Republika Čecha

Nordesfer - Armazanes de Ferro, S.A.

Lugar da Ribela-S. Pedro de Avioso
4471-908 Santa Maria do Avioso - Maia
Portugal

Vossa Encomenda - Your order:
002390

Nota de Aviso - Advise note:
ou/ou

Guia de Remessa n.º - Delivery note:
09/02/003572/01 26.02.2009

Nossa Encomenda/Contrato- Our order:
3300098046 / 000010
0041106483 / 24

Vagao n.º - Waggon No:

3154-5964373-2

Certificado de Qualidade 3.1 - Inspection Certificate 3.1, EN 10204:2004

Entrega - Delivery	Peso - Weight	Qualidade -Grade	Norma - Standard
VARAO DE AÇO TRIGOMA 500S - A 500NR ACC. COM REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-076/2008 10 mm 12,000 m	21.648 kg	A400NR	LNEC E 449-08

Análise Química - Chemical analysis (%)

Vazamento n.º Heat No	Peso Weight (kg)							
T52484	12008	C	MN	SI	P	S	N	CEQ
BO-cc billetes		0.18	0.74	0.09	0.020	0.026	0.0052	0.32
T52493	9640	C	MN	SI	P	S	N	CEQ
BO-cc billetes		0.18	0.75	0.09	0.022	0.026	0.0048	0.33

Características Mecânicas - Mechanical values

Vazamento n.º Heat No	Ponto de Cedência Yield point Re [MPa]	Tensão de Rotura Tensile strength Rm [MPa]	Alongamento Elongation A5 [%]	Extensão Total na Força Máxima Agt[%]	Energia de impacto Energy of impact KV (J) / KCV (J/cm2)	SO (mm2)	Re / 500	Rm / Re
T52484	450	537	25,6	10,6		78,500	1,125	1,193
	486	557	28,8	12,1			1,215	1,146
T52493	459	535	30,2	9,2		78,500	1,148	1,166
	520	574	30,0	8,2			1,300	1,104

Medidas das Nervuras - Measurement of ribs

T52484
améd. (mm) : 0,880
c1 (mm) : 7,3
c2 (mm) : 5,3
cméd. (mm) : 6,30
sumfi (mm) : 3,8
fR : 0,082

Medidas das Nervuras - Measurement of ribs

T52493
améd. (mm) : 0,905
c1 (mm) : 7,3
c2 (mm) : 5,3
cméd. (mm) : 6,30
sumfi (mm) : 3,6
fR : 0,085

ENSAIOS DE DOBRAGEM E DESDOBRAGEM CUMPREM TODAS
AS CONDIÇÕES EXIGIDAS
BEND AND REBEND TESTS FULFILLED THE REQUIRED CONDITIONS
WARMLY MANUFACTURED

A ACTIVIDADE RADIO-ISOTÓPICA FOI TESTADA COM UM PROVEDOR DE FUNDIÇÃO, NÃO ULTRAPASSOU 100 BQ/KG.
RADIO-ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE IT WAS NO HIGHER THAN 100 BQ/KG.

Os produtos estão em conformidade com a encomenda. Products conform with the prescription of order.

Perito - Expert: Steffek Josef ing. Responsável pela Inspeção da Qualidade e Realização de Ensaios
Officer of Quality Inspection of Realising and Attesting

Třinec : 27.02.2009

Dipl. Ing. Josef Steffek
independent authorized agent
unabhängiger berechtigter Vertreter
nezávislý oprávněný zástupce



TRINECKÉ ŽELEZÁŘNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Republika Čecha

Nordesfer - Armazanes de Ferro, S.A.

Vossa Encomenda - Your order:
002573

Nossa Encomenda/Contrato- Our order:
3300100804 / 000010
0041110743 / 24

Lugar da Ribela-S. Pedro de Avioso
4471-908 Santa Maria do Avioso - Maia
Portugal

Nota de Aviso - Advise note:
ou/ou

Vagao n.º - Waggon No:

Guia de Remessa n.º- Delivery note:
09/05/000130/01 04.05.2009

8154-5978282-8

Certificado de Qualidade 3.1 - Inspection Certificate 3.1, EN 10204:2004

Entrega - Delivery	Peso - Weight	Qualidade -Grade	Norma - Standard
REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-076/2008 VARAO DE AÇO TRIGOMA 400S - A 400NR ACC. COM 10 mm 12,000 m	23.285 kg	A400NR	LNEC E 449-08

Análise Química - Chemical analysis (%)

Vazamento n.º Heat No	Peso Weight (kg)								
T52893	23285	C	MN	SI	P	S	N	CEQ	
BO-cc billetes		0.17	0.72	0.08	0.017	0.028	0.0058	0.31	

Características Mecanicas - Mechanical values

Vazamento n.º Heat No	Ponto de Cedencia Yield point Re [MPa]	Tensao de Rotura Tensile strength Rm [MPa]	Alongamento Elongation A5 [%]	Extensao Total na Força Máxima Agt[%]	Energia de Impacto Energy of impact KV (J) / KCV (J/cm2)	SO (mm2)	Re / 500	Rm / Re
T52893	571	634	23,0	7,5		78,500	1,428	1,110
	570	642	23,4	8,2			1,425	1,126

Medidas das Nervuras - Measurement of ribs

T52893
améd. (mm) : 0,855
c1 (mm) : 7,1
c2 (mm) : 5,2
cméd. (mm) : 6,15
sumfi (mm) : 4,3
fr : 0,080

ENSAIOS DE DOBRAGEM E DESDOBRAGEM CUMPREM TODAS

AS CONDIÇÕES EXIGIDAS

BEND AND REBEND TESTS FULFILLED THE REQUIRED CONDITIONS

WARMLY MANUFACTURED

A ACTIVIDADE RADIO-ISOTÓPICA FOI TESTADA COM UM PROVETE DE FUNDIÇÃO, NAQ ULTRAPASSOU 100 BQ/ KG.
RADIO-ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE IT WAS NO HIGHER THAN 100 BQ/KG.



Dipl. Ing. Josef Steffek
independent authorized agent
unabhängiger berechtigter Vertreter
nezavislý oprávněný zástupce

Os produtos estão em conformidade com a encomenda. Products conform with the prescription of order.

Perito - Expert: Steffek Josef ing., Responsável pela Inspeção da Qualidade e Realização de Ensaios
Třinec : 05.05.2009



TRINECKÉ ŽELEZÁRNY, a.s. / Průmyslová 1000 / 739 70 Třinec - Staré Město / Repùblica Checa

Nordesfer - Armazanes de Ferro, S.A.

Lugar da Ribela-S. Pedro de Avioso
4471-908 Santa Maria do Avioso - Maia
PortugalVossa Encomenda - Your order:
002573

Nossa Encomenda/Contrato- Our order:

3300100812 / 000010

0041110743 / 24

Nota de Aviso - Advise note:
ou/ou

Vagao n.º - Waggon No:

Guia de Remessa n.º - Delivery note:

09/05/002309 18.05.2009

3154-5951980-9

Certificado de Qualidade 3.1 - Inspection Certificate 3.1, EN 10204:2004

Entrega - Delivery	Peso - Weight	Qualidade -Grade	Norma - Standard
REINFORCING STEEL BAR TRIGOMA 400S (CLASSE A 400 NR) ACC.TO LNEC DC-57/E 449 PSG-076/2008 VARAO DE AÇO TRIGOMA 400S - A 400NR ACC. COM 12 mm 12,000 m	49.958 kg	A400NR	LNEC E 449-08

Análise Química - Chemical analysis (%)

Vazamento n.º Heat No	Peso Weight (kg)							
T54035	28808	C	MN	SI	P	S	N	CEQ
BO-cc biletos		0.17	0.75	0.08	0.016	0.023	0.0036	0.32
T54039	21150	C	MN	SI	P	S	N	CEQ
BO-cc biletos		0.18	0.73	0.08	0.016	0.017	0.0039	0.32

Características Mecanicas - Mechanical values

Vazamento n.º Heat No	Ponto de Cedencia Yield point Re [MPa]	Tensao de Rotura Tensile strength Rm [MPa]	Alongamento Elongation A5 [%]	Extensao Total na Força Máxima Agt[%]	Energia de impacto Energy of impact KV (J) / KCV (J/cm2)	SO (mm2)	Re / 500	Rm / Re
T54035	471	543	23,0	7,3		113,040	1,178	1,153
	491	569	24,2	6,8			1,228	1,159
T54039	500	575	22,5	8,8		113,040	1,250	1,150
	521	593	21,5	9,3			1,303	1,138

Medidas das Nervuras - Measurement of ribs

T54035
améd. (mm) : 0,825
c1 (mm) : 7,3
c2 (mm) : 5,6
cméd. (mm) : 6,45
sumfi (mm) : 6,3
FR : 0,071

Medidas das Nervuras - Measurement of ribs

T54039
améd. (mm) : 0,835
c1 (mm) : 7,3
c2 (mm) : 5,7
cméd. (mm) : 6,50
sumfi (mm) : 6,5
FR : 0,071

ENSAIOS DE DOBRAGEM E DESDOBRAGEM CUMPREM TODAS
AS CONDIÇÕES EXIGIDAS
BEND AND REBEND TESTS FULFILLED THE REQUIRED CONDITIONS
WARMLY MANUFACTURED

A ACTIVIDADE RADIO-ISOTÓPICA FOI TESTADA COM UM PROVETE DE FUNDAÇÃO, NAO ULTRAPASSOU 100 BQ/ KG.
RADIO-ISOTOPIC ACTIVITY WAS CHECKED IN LADLE SAMPLE, IT WAS NO HIGHER THAN 100 BQ/KG.

Os produtos estao em conformidade com a encomenda. Products conform with the prescription of order.
Perito - Expert: Steffek Josef Ing., Responsável pela Inspeção da Qualidade e Realização de Ensaios independent authorized agent
Třinec : 18.05.2009 , Officer of Quality Inspection of Realising and Attesting
Dipl. Ing. Josef Steffek
unabhängiger berechtigter Vertreter
nezávislý oprávněný zástupce