

OFFICINE SASPE S.R.L.

Via Senato, 10
20020 ARESE (MI)

Date : 20.12.10

Doc. N° Cover 64W1A - 64W1B

INSPECTION BOOK N° 64W1A - 64W1B

WORKSHOP JOB N° : 1E35

CUSTOMER : BALLESTRA S.p.A. Milano

JOB : 1E35

ORDER N°. : 102026

Item : 64W1A - 64W1B

Description : NOZZLES CIRCUIT

OFFICINE SASPE S.R.L.
E.Accomazzi

Forci
22/12/2010 (2)

OFFICINE SASPE S.R.L. Via Senato, 10 20020 ARESE (MI)		CERTIFICATO DI CONFORMITA' CERTIFICATE OF COMPLIANCE					
Workshop Job N° 1E35 N°.: CO 510/10		CUSTOMER : BALLESTRA S.p.A. JOB N°. 1E35					
		Purchase Order N°. : 102026					
		Doc. N°. Sheet 1 of 1 Rev. 0					
ITEM :		64W1A - 64W1B					
Description :		NOZZLES CIRCUIT					
DATA SHEET N°.							
Constructive Dwg. N°.		1E35.60.1107 - 1E35.60.1108					
		QUALITY CONTROL PLAN :					
<div>SI CERTIFICA CHE IL MATERIALE RISULTA CONFORME A QUANTO RICHiesto DAI DISEGNI, DALL' ORDINE ED ALLE SPECIFICHE IN ESSI RICHIAMATI.</div> <div>WE HEREBY CERTIFY THAT THE MATERIAL IS IN COMPLETELY ACCORDANCE WITH THE DRAWINGS, THE ORDER AND THE SPECIFICATIONS NOTED IN ABOVE MENTIONED DOCUMENTS.</div> <div><div>OFFICINE SASPE S.R.L. ARESE (MI)</div><div><div>Sarci</div><div>22/12/2010</div></div></div>							
1	E.Accomazzi						
0	Off.Saspe Srl	20.12.10					
Rev.	Issued by	Date	Checked by	Date	Approved by	Date	Description
REV.	Emesso da	Data	Controllato da	Data	Approvato da	Data	Descrizione

OFFICINE SASPE S.R.L. Via Senato, 10 20020 ARESE (MI)	CERTIFICATO CONTROLLO DIMENSIONALE <i>DIMENSIONAL TEST REPORT</i>
Workshop Job n° 1E35 N°. C0 510/10	CUSTOMER : BALLESTRA S.p. A. JOB N° 1E35 Purchase Order N°. 102026
	Doc. N°. Sheet 1 of 1 Rev. 0

ITEM :	64W1A - 64W1B
Description :	NOZZLES CIRCUIT
DATA SHEET N°.	
Constructive Dwg. N°.	1E35.60.1107 - 1E35.60.1108

SI CERTIFICA CHE L' APPARECCHIO E' STATO SOTTOPOSTO A
CONTROLLO DIMENSIONALE IN ACCORDO AI DISÉGNI :

BALLESTRA S.p.A. : DATA SHEET N°
BALLESTRA S.p.A. : COSTRUTTIVO N° 1E35.60.1107 - 1E35.60.1108

ED ALLE SPECIFICHE RICHIAMATE SUGLI STESSI

TUTTE LE MISURAZIONI EFFETTUATE SONO CONFORMI
ALLE TOLLERANZE INDICATE A DISEGNO
ED ALLE SPECIFICHE IN ESSI RICHIAMATE.
E' STATO ESEGUITO CONTROLLO SPESSORI

WE CERTIFY THAT THE ITEM HAS BEEN CONTROLLED
DIMENSIONALLY ACCORDING TO DRAWINGS :

BALLESTRA S.p.A. : DATA SHEET N°
BALLESTRA S.p.A. : CONSTRUCTIVE N° 1E35.60.1107 - 1E35.60.1108

AND TO THE SPECIFICATIONS NOTED IN
THE ABOVE MENTIONED DRAWINGS.

ALL THE MEASUREMENTS PERFORMED RESULT WITHIN
DRAWINGS TOLERANCES
AND TO THE SPECIFICATIONS NOTED IN
THE ABOVE MENTIONED DRAWINGS.
THICKNESS CHECK HAS BEEN PERFORMED

Forci
22/12/2010

RISULTATO / Result : SODDISFACENTE / Satisfactory

1			E.Accomazzi				
0		20.12.10	Off.Saspe Srl				
Rev.	Issued by	Date	Checked by	Date	Approved by	Date	Description
REV.	Emesso da	Data	Controllato da	Data	Approvato da	Data	Descrizione

bulloneria Trevi srl
Via Carlo Porta 7
24047 Treviglio (BG)

OVER srl
VIALE MATTEOTTI 16
24050 GRASSOBBIO (BG)

Certificato di Collaudo EN 10204 3.1 n. 10202 del 19/11/10

Ordine cliente: fax del 11/11/10

Normativa							
ASTM A193 - 10a/ASME SA193 Ed.2007 B7 ASME II part A ed 2007 add.09							
Articolo ROLLED BAR ANSI B1.1 A/SA 193 B7 5/8"-11UNCX1000				Trattamento termico QUENCHED AND TEMPERED 593°C			
Colata 464081		Quantità 2		Lotto P1044965		Job PB 0000002510	
Analisi chimica "%"							
	C	Mn	Si	P	S	Cr	Mo
Richiesto	0.037-0.49	0.650-1.1	0.15-0.35	max0.035	max 0.04	0.75-1.2	0.15-0.25
Preventivato	.426	.840	.255	.018	.021	1.040	.167
Prova di trazione							
	Rm "Mpa"	Rp02 "Mpa"		A "%"		Z "%"	
Richiesto	Min 860	Min 720		Min 16		Min 50	
Preventivato	961	804		20.0		57.8	
		Hardness "HB"					
Richiesto			max 321				
Preventivato			288				
Macroetch Examination		Positive		Controllo visivo dimensionale		Positive	

Il materiale è stato prodotto, testato e controllato in conformità alle specifiche ed ai requisiti supplementari dell'ordine di acquisto o di contratto.

Quality Control Department
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Certificato di Collaudo EN 10204 3.1 n. 10202 del 19/11/10

Ordine cliente: fax del 11/11/10

Normativa						
ASTM A194 - 10°/ASME SA194 Ed.2007 GR.2H ASME II part A ed 2007 add.09						
Articolo HEAVY HEX NUT H=d ANSI B18.2.2 Tab 9 A/SA 194 2H 5/8"-11UNC			Trattamento termico QUENCHED AND TEMPERED 455°C			
Colata 54997		Quantità 50		Lotto P1090738		Job PB 0000002505
Analisi chimica "%"						
	C	Mn	Si	P	S	
Richiesto	0.4-0.55	Max 1	Max 0.4	Max 0.04	0.05	
Preventivato	.450	.730	.210	.017	.035	
Prova di trazione						
	Proof Load		Hardness "HB"		HB after T.T. 24h	
Richiesto	Positive		248-327		179	
Preventivato	Positive		286;301		279;288	
Macroetch Examination		Positive	Controllo visivo dimensionale		Positive	

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Ordine cliente: fax del 11/11/10

Normativa							
ASTM A193 - 10a/ASME SA193 Ed.2007 B7 ASME II part A ed 2007 add.09							
Articolo ROLLED BAR ANSI B1.1 A/SA 193 B7 7/8"-9UNCX1000				Trattamento termico QUENCHED AND TEMPERED 593°C			
Colata 38016		Quantità 15		Lotto P1102504		Job PB	
Analisi chimica "%"							
	C	Mn	Si	P	S	Cr	Mo
Richiesto	0.037-0.49	0.650-1.1	0.15-0.35	max0.035	max 0.04	0.75-1.2	0.15-0.25
Preventivato	.410	.770	.240	.015	.022	1.040	.180
Prova di trazione							
	Rm "Mpa"	Rp02 "Mpa"		A "%"		Z "%"	
Richiesto	Min 860	Min 720		Min 16		Min 50	
Preventivato	973	802		23.0		56.0	
		Hardness "HB"					
Richiesto		max 321					
Preventivato		302					
Macroetch Examination		Positive		Controllo visivo dimensionale		Positive	

Il materiale è stato prodotto, testato e controllato in conformità alle specifiche ed ai requisiti supplementari dell'ordine di acquisto o di contratto.

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Ordine cliente: fax del 11/11/10

Normativa						
ASTM A194 - 10°/ASME SA194 Ed.2007 GR.2H ASME II part A ed 2007 add.09						
Articolo			Trattamento termico			
HEAVY HEX NUT H=d ANSI B18.2.2 Tab 9			QUENCHED AND TEMPERED 455°C			
A/SA 194 2H						
7/8"-9UNC						
Colata	Quantità		Lotto		Job PB	
20113	250		P1090731			
Analisi chimica "%"						
Richiesto	C	Mn	Si	P	S	
Preventivato	0.4-0.55	Max 1	Max 0.4	Max 0.04	0.05	
Prova di trazione						
Richiesto	Proof Load		Hardness "HB"		HB after T.T. 24h	
Preventivato	Positive		248-327		179	
Macroetch Examination		Positive	Controllo visivo dimensionale		Positive	

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Ordine cliente: fax del 11/11/10

Normativa							
ASTM A193 - 10a/ASME SA193 Ed.2007 B7 ASME II part A ed 2007 add.09							
Articolo ROLLED BAR ANSI B1.1 A/SA 193 B7 1/2"-13UNCX1000				Trattamento termico QUENCHED AND TEMPERED 593°C			
Colata T36798		Quantità 42		Lotto P1087513		Job PB	
Analisi chimica "%"							
	C	Mn	Si	P	S	Cr	Mo
Richiesto	0.037-0.49	0.650-1.1	0.15-0.35	max0.035	max 0.04	0.75-1.2	0.15-0.25
Preventivato	.420	.780	.280	.019	.035	1.090	.194
Prova di trazione							
	Rm "Mpa"		Rp02 "Mpa"		A "%"		Z "%"
Richiesto	Min 860		Min 720		Min 16		Min 50
Preventivato	981		787		22.0		58.5
		Hardness "HB"					
Richiesto		max 321					
Preventivato		298					
Macroetch Examination		Positive		Controllo visivo dimensionale		Positive	

Il materiale è stato prodotto, testato e controllato in conformità alle specifiche ed ai requisiti supplementari dell'ordine di acquisto o di contratto.

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Ordine cliente: fax del 11/11/10

Normativa						
ASTM A194 - 10°/ASME SA194 Ed.2007 GR.2H ASME II part A ed 2007 add.09						
Articolo HEAVY HEX NUT H=d ANSI B18.2.2 Tab 9 A/SA 194 2H 1/2"-13UNC				Trattamento termico QUENCHED AND TEMPERED 455°C		
Colata 32856	Quantità 660		Lotto P1087190		Job PB	
Analisi chimica "%"						
Richiesto	C 0.4-0.55	Mn Max 1	Si Max 0.4	P Max 0.04	S 0.05	
Preventivato	.440	.750	.200	.006	.025	
Prova di trazione						
Richiesto	Proof Load Positive		Hardness "HB" 248-327		HB after T.T. 24h 179	
Preventivato	Positive		275;309		270;300	
Macroetch Examination		Positive	Controllo visivo dimensionale		Positive	

Il materiale è stato prodotto, testato e controllato in conformità alle specifiche ed ai requisiti supplementari dell'ordine di acquisto o di contratto.

Quality Control Departement
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SEDE AMMINISTRATIVA E STABILIMENTO:
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METALFAR
PRODOTTI INDUSTRIALI S.P.A.

SALA PROVE E ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

Certif. n. 4687	Del / Dated 17.11.2010	Fattura / Invoice n. 3279	Del / Dated 17.11.2010
DDT / Del Note n. 6149	Del / Dated 17.11.2010		
FERRAMENTA INDUSTRIALE BONACINA SRL		BG IT	
VIALE EUROPA, 26 - FRAZ. CURNASCO			
24048 TREVISO			

Pag. 1 - 3

COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	VS. ORDINE YOUR REF.	Q.T.A' Q.T.Y	DESCRIZIONE DESCRIPTION	DIM. IN ACC. A DIM. ACCORDANCE TO	VISIVO E DIMENS. VISUAL & DIMENS.												
991893	991893	008	3728	100.00	S/O 150 RF 3/4" F316L P.M.I. 100% PERFORMED AND SATISFACTORY	ASME/ANSI B16.5	SATISFACTORY												
10/39216	991893	001	3884	100.00	SW 150 RF 1" 40S F316L P.M.I. 100% PERFORMED AND SATISFACTORY	ASME/ANSI B16.5	SATISFACTORY												
697683	991893	002	3884	2.00	W/N 300 RF 6" XS LF2	ASME/ANSI B16.5	SATISFACTORY												
09/36043	991893	003	3884	4.00	W/N 300 RF 3" 160 LF2	ASME/ANSI B16.5	SATISFACTORY												
10/71475	991893	004	3884	150.00	BLIND 600 RF 4" A105	ASME/ANSI B16.5	SATISFACTORY												
919647	991893	005	3884	2.00	BLIND 500 RTJ 1" F304L P.M.I. 100% PERFORMED AND SATISFACTORY	ASME/ANSI B16.5	SATISFACTORY												
COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	MATERIALE MATERIAL	C%	SI%	MI%	S%	P%	CI%	NI%	MO%	TI%	CU%	V%	Nb%	N%	AI%	C.E.%	ALTRI ELEMENTI OTHER ELEMENTS
991893	991893	008	ASTM A182 F316/F316L	0.016	0.450	1.670	0.028	0.029	16.850	10.050	2.020	0.000	0.000	0.000	0.000	0.027	0.000	0.000	
10/39216	991893	001	ASTM A182 F316/F316L	0.016	0.450	1.670	0.028	0.029	16.850	10.050	2.020	0.000	0.000	0.000	0.000	0.027	0.000	0.000	
697683	991893	002	ASTM A350 LF2 CL 1/2	0.180	0.240	1.160	0.008	0.008	0.090	0.040	0.010	0.023	0.120	0.025	0.000	0.000	0.028	0.409	
09/36043	991893	003	ASTM A350 LF2 CL 1/2	0.184	0.236	1.110	0.013	0.012	0.053	0.026	0.008	0.001	0.028	0.001	0.001	0.000	0.031	0.384	
10/71475	991893	004	ASTM A105	0.190	0.240	0.940	0.014	0.017	0.130	0.050	0.010	0.010	0.180	0.000	0.000	0.000	0.005	0.390	
919647	991893	005	ASTM A105	0.180	0.220	1.080	0.007	0.014	0.090	0.050	0.010	0.018	0.180	0.004	0.001	0.000	0.025	0.396	
			ASTM A182 F304/F304L	0.015	0.310	1.510	0.030	0.028	18.150	8.200	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.000	
COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	PROVETTA / TEST SPECIM. SEZ. SECT. LUNG. LENG. mm	SNERVAMENTO YIELD POINT N/mm2 >=0.2%	ROTTURA TENSILE STRENGTH N/mm2 >=	ALLUNGAMENTO ELONGATION %>=	CONTRAZIONE REDUCT. OF AREA %>=	DUREZZA HB HARDNESS HB	PIEGA BEND TEST	SCHIACCIAM. FLATTENING TEST	RESILLENZA / IMPACT TEST - JOULE/cm2	FORMA SHAPE 1=O 2=□	SNERVAMENTO YIELD POINT N/mm2 >=1.0%						
991893	991893	008	126.60	50.80	595.0	54.0	79.0	168.0 - 172.0	0.0	0.0	20	156	160	162	1	0.0			
10/39216	991893	001	126.60	50.80	595.0	54.0	79.0	168.0 - 172.0	0.0	0.0	20	156	160	162	1	0.0			
697683	991893	002	126.60	50.80	529.0	30.0	60.0	159.0 - 163.0	0.0	0.0	-50	68	60	70	1	0.0			
09/36043	991893	003	126.60	50.80	525.0	32.0	60.0	156.0 - 159.0	0.0	0.0	-50	64	62	62	1	0.0			
10/71475	991893	004	126.60	50.80	516.0	30.0	59.0	156.0 - 159.0	0.0	0.0	20	90	86	90	1	0.0			
919647	991893	005	126.60	50.80	542.0	33.0	58.0	164.0 - 166.0	0.0	0.0	20	83	88	88	1	0.0			
			50.80	303.0	581.0	67.0	80.0	174.0 - 178.0	0.0	0.0	20	156	156	158	1	0.0			
COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	MATERIALE MATERIAL	TRATTAMENTO TERMICO HEAT TREATMENT				FORNO FURNACE				ORIGINE ORIGIN							
991893	991893	008	ASTM A 182A 182M -09a ASME SA 182SA 182M-E07	SOLUTION TREAT AT 1050 C - QUENCHED IN WATER				ELECTRIC FURNACE				EUROPE							
10/39216	991893	001	ASTM A 182A 182M -09a ASME SA 182SA 182M-E07	SOLUTION TREAT AT 1050 C - QUENCHED IN WATER				ELECTRIC FURNACE				EUROPE							
697683	991893	002	ASTM/ASME A 350SA 350 M - 07	NORMALIZED AT 930 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE							
09/36043	991893	003	ASTM/ASME A 105SA 105 M - 09	NORMALIZED AT 930 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE							
10/71475	991893	004	ASTM/ASME A 105SA 105 M - 09	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE							
919647	991893	005	ASTM A 182A 182M -09a ASME SA 182SA 182M-E07	SOLUTION TREAT AT 1050 C - QUENCHED IN WATER				ELECTRIC FURNACE				EUROPE							
NOTE MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15166																			
NOTES																			
UFFICIO CONTROLLO QUALITA' ENTE UFFICIALE DI COLLAUDO MARCHIO PRODUZIONE																			
QUALITY CONTROL DEPARTMENT INSPECTION AUTHORITY MANUFACTURER'S SYMBOL																			

NOTE MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156

UFFICIO CONTROLLO QUALITA' QUALITY CONTROL DEPARTMENT

ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY

MARCO PRODUZIONE MANUFACTURER'S SYMBOL



Tel. 031.655441
Cod. 1750 0000



METALFAR
PRODOTTI INDUSTRIALI S.P.A.

SEDE AMMINISTRATIVA E STABILIMENTO
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SALA PROVE E ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

Certif. n. 2381 Del / Dated 11.06.2010
DDT / Del Note n. 3057 Del / Dated 04.06.2010
Fattura / Invoice n. Del / Dated

FERRAMENTA INDUSTRIALE BONACINA SRL
VIALE EUROPA, 29 - FRAZ. CURNASCO
24048 TREVISO

BG IT

COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	VS. ORDINE YOUR REF.	Q.TA' Q.TY	DESCRIZIONE DESCRIPTION	DIM. IN ACC. A DIM. ACCORDANCE TO	VISIVO E DIMENS. VISUAL & DIMENS.													
	08/77048	008	REINTEGRO C.TO DEPOSITO	10,00	S/O 300 RF 1"	A105	SATISFACTORY													
	74301	009	REINTEGRO C.TO DEPOSITO	10,00	S/O 300 RF 1.1/4"	A105	SATISFACTORY													
	09/78064	010	REINTEGRO C.TO DEPOSITO	10,00	S/O 300 RF 4"	A105	SATISFACTORY													
	77027	011	REINTEGRO C.TO DEPOSITO	10,00	S/O 600 RF 3/4"	A105	SATISFACTORY													
	09/77927	012	REINTEGRO C.TO DEPOSITO	10,00	S/O 600 RF 2"	A105	SATISFACTORY													
	09/36264	014	REINTEGRO C.TO DEPOSITO	10,00	S/O 600 RF 4"	A105	SATISFACTORY													
	09/78933	015	REINTEGRO C.TO DEPOSITO	10,00	BLIND 150 RF 4"	A105	SATISFACTORY													
	COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	MATERIALE MATERIAL	C%	SI%	Mn%	S%	P%	Ct%	NI%	Mo%	TI%	Cu%	V%	Nb%	N%	A%	C.E.%	ALTRI ELEMENTI OTHER ELEMENTS
		08/77048	008	ASTM A105	0,190	0,180	0,890	0,015	0,014	0,070	0,050	0,010	0,007	0,170	0,001	0,001	0,000	0,026	0,369	
		74301	009	ASTM A105	0,185	0,200	0,960	0,014	0,018	0,100	0,050	0,010	0,007	0,210	0,002	0,000	0,000	0,023	0,384	
09/78064		010	ASTM A105	0,205	0,240	1,010	0,009	0,010	0,080	0,060	0,010	0,008	0,180	0,001	0,001	0,000	0,024	0,408		
77027		011	ASTM A105	0,185	0,280	1,020	0,007	0,014	0,100	0,060	0,010	0,009	0,230	0,001	0,001	0,000	0,029	0,395		
	09/77927	012	ASTM A105	0,210	0,260	0,990	0,010	0,012	0,120	0,070	0,010	0,009	0,120	0,001	0,001	0,000	0,021	0,413		
	09/36264	014	ASTM A105	0,195	0,210	0,970	0,015	0,020	0,180	0,090	0,020	0,010	0,200	0,003	0,000	0,000	0,005	0,417		
	09/78933	015	ASTM A105	0,200	0,240	0,990	0,005	0,010	0,070	0,040	0,010	0,010	0,110	0,001	0,002	0,000	0,025	0,391		
	COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	PROVETTA / TEST SPECIM. SEZ./SECT. LUNG./LENG. mm2 mm	SNERVAMENTO YIELD POINT N/mm2 >=0,2%	ROTTURA TENSILE STRENGTH N/mm2 >=	ALLUNGAMENTO ELONGATION %>=	CONTRAZIONE REDUCT. OF AREA %>=	DUREZZA HB HARDNESS HB	PIEGA BEND TEST	SCHIACCIAM. FLATTENING TEST	RESILIENZA / IMPACT TEST - JOULE/m2				FORMA SHAPE 1-O 2=□	SNERVAMENTO YIELD POINT N/mm2 >=1,0%			
		08/77048	008	126,60	50,80	323,0	521,0	34,0	60,0	159,0 - 163,0	0,0	0,0	KV	20	87	80	85	1	0,0	
74301		009	126,60	50,80	328,0	529,0	33,0	58,0	159,0 - 163,0	0,0	0,0	KV	20	80	80	85	1	0,0		
09/78064		010	126,60	50,80	341,0	551,0	32,0	57,0	166,0 - 170,0	0,0	0,0	KV	20	86	89	82	1	0,0		
77027		011	126,60	50,80	333,0	538,0	33,0	58,0	163,0 - 165,0	0,0	0,0	KV	20	83	90	87	1	0,0		
	09/77927	012	126,60	50,80	341,0	551,0	32,0	57,0	166,0 - 170,0	0,0	0,0	KV	20	87	80	85	1	0,0		
	09/36264	014	126,60	50,80	360,0	529,0	31,0	60,0	159,0 - 163,0	0,0	0,0	KV	20	86	90	83	1	0,0		
	09/78933	015	126,60	50,80	337,0	544,0	33,0	59,0	164,0 - 166,0	0,0	0,0	KV	20	86	86	81	1	0,0		
	COD. COL. HEAT CODE	COLATA HEAT	POS. ITEM	MATERIALE IN ACCORDO A MATERIAL IN ACCORDANCE TO				TRATTAMENTO TERMICO HEAT TREATMENT				FORNO FURNACE			ORIGINE ORIGIN					
		08/77048	008	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE							
74301		009	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								
09/78064		010	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								
77027		011	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								
	09/77927	012	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								
	09/36264	014	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								
	09/78933	015	ASTM/ASME A 105/SA 105 M - 05	NORMALIZED AT 920 C - COOLED IN STILL AIR				ELECTRIC FURNACE				EUROPE								

NOTE	UFFICIO CONTROLLO QUALITA' QUALITY CONTROL DEPARTEMENT	ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY	MARCHIO PRODUZIONE MANUFACTURER'S SYMBOL
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COPIA CONFORME
ALL'ORIGINALE

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ADDRESS Via Arno, 3
20029 TURBIGO (MI) ITALIA
PHONE 0331 871111 (3 linee r.a.)
FAX 0331 871468
WEB SITE www.turozzi.it
E-MAIL turozzi@turozzi.it

AZIENDA CON
SISTEMA QUALITÀ
CERTIFICATO

COMPANY WITH
QUALITY SYSTEM
CERTIFIED

turozzi
fratelli

Raccordi in acciaio per impianti ad alta pressione
Steel fittings for high pressure plants

CLIENTE / Purchaser FERRAM. IND. BONACINA S.r.l.	CERTIFICATO DI COLLAUDO Works certificate EN 10204 3.1	FOGLIO Sheet
ORDINE / Order 15/11/10	ns.DdT 1701	N 46737 DEL / OF 16/11/2010
		1

ITEM Item	QUANTITÀ Quantity	DESCRIZIONE / Description	COLATA Heat	MATERIALE Material	CERTIF. ORIG. Mill certif.	ACCIAIERIA / FORNITORE Steel plant / Supplier
		VS.ORD. FAX DEL 15/11/2010				
1	40	INS.RID. 1x1/2 3000 SW A105	27352	A105	838/961.1	LEALI
2	8	GONITO W/F 1/2 3000 NPT F304L	672464	A182 F304L/304	22692/3426	COGNE
3	5	BOCCH. W/F (L815) 2 3000 NPT A105	72386A	A105	14214.9L	RIVA
4	4	TAPPO/T.T. 3/4 L=75 NPT SA182 F304L (*)	6988	A182 F304L/304	787331/2301	ACC.VALBRUNA
5	116	TAPPO/T.ESAG. 3/4 NPT NACE F316L (**)	DP53	A182 F316L/316	0879/2272.3	ACC.VALBRUNA
5	84	TAPPO/T.ESAG. 3/4 NPT NACE F316L (**)	DP59	A182 F316L/316	1753/2471.3	Acc.Valbruna

ANALISI CHIMICA - Chemical Analysis

COLATA Heat	C %	Mn %	Si %	P %	S %	Ni %	Cr %	Mo %	Ti %	V %	Cu %	Al %	Nb %	N %	%	%	C.E. %
27352	0,168	0,930	0,240	0,010	0,004	0,240	0,260	0,050		0,004	0,200	0,023	0,002				0,408
672464	0,018	1,710	0,340	0,035	0,029	8,170	18,260							0,030			
72386A	0,200	0,930	0,170	0,009	0,010	0,050	0,090	0,010		0,018	0,120	0,023	0,001				0,390
6988	0,016	1,790	0,660	0,032	0,030	8,100	18,320							0,084			
DP53	0,020	1,630	0,670	0,035	0,020	10,210	16,910	2,010						0,063			
DP59	0,014	1,500	0,590	0,028	0,030	10,000	16,580	2,100						0,063			

CARATTERISTICHE MECCANICHE - Mechanical Test

COLATA Heat	R Tensile Strength N/mm ²	S Yield Point N/mm ²	A : 2" Elongation %	C Reduction of area %	Bending Test	Flattening Test	Hydraulic Test	HB Hardness test	K Impact test J	Temp.°C	STATO DI FORNIT (TRATT. TERM.) Supply cond. (heat treatment)	TEMP °C	NOTE Remarks
27352	517	391	29,9	69,0				157 161					
672464	603	272	58,0	72,0							SOLUT.TREATED	1060	
72386A	521	323	32,1	56,3				154 154					
6988	715	463	49,0	67,0							SOLUT.TREATED	1050	
DP53	729	557	38,0	68,0							SOLUT.TREATED	1050	
DP59	688	510	42,0	68,0							SOLUT.TREATED	1050	

NATURA DEL MATERIALE / Kind of material Acciaio elaborato al forno elettrico Steel made by electric furnace	NOTE / Remarks (*) Materiale conforme a / Material according to: ASME II, part A, edizione 2007, add.8 2009.
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COLLAUDI INTERNI / Works inspection Dimensionale/Visivo Dimensional/Visual	RISULT. Result Ok Ok	COLLAUDI SUPPLEMENTARI / Supplementary tests (**) Effettuate prove di durezza che non hanno superato il valore di 22HRC. Il materiale è conforme a NACE std. MR-01-75.	RISULT Result Ok
--	-------------------------------	---	------------------------

RESPONSABILE QUALITÀ / Quality Manager	ENTE COLLAUDATORE / Inspection agency Via... Tel. 0331 871111 - 0331 871468 Cod. Fisc. G.P. IVA 00727710162	turozzi fratelli
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CERTIFICATO DI COLLAUDO / TEST CERTIFICATE

CLIENTE/CUSTOMER: FERRAMENTA INDUSTRIALE BONACINA SRL
ORDINE CLIENTE/CUSTOMER ORDER N.: ORDINE FAX DEL 18/11/10
DOCUMENTO DI TRASPORTO: DT/END201000001716
LISTA/JOB: 3641
CERTIFIC. N.: CTCERT201000001821
DATA/DATE: 19/11/2010

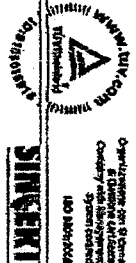
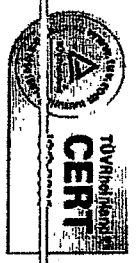
Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.
1	2	RL-NH	0771033	COUPLINGS 1 3000 BSPT	ASTM A105N-09	RIVA ACCIAIO SPA	50425
ANALISI CHIMICA DI ACCIAIERIA							
				C% Mn% P% S%	Ti% Nb% Co% V%	N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT
				0,180 0,870 0,015 0,015	0,020 0,120 0,070 0,010	0,020 0,170 0,000 0,000	0,015 0,000 0,370
STEEL MILL CHEMICAL ANALYSIS							
				0,190 0,890 0,011 0,008	0,230 0,150 0,050 0,020	0,021 0,150 0,001 0,000	0,017 0,000 0,380
Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calma a							
CARATTERISTICHE MECCANICHE							
				Snervimento	Rottura	Resistenza	Prova idraulica
				Yield str.	Ten. Str.	Impact test	Pieg. H Test B Test
				309	497	51.8 48.2 50	0
MECHANICAL PROPERTIES							
				N/mm(2)	497	33.50 58.60 HB 142	-46°C
RACCORDI SECONDO / FITTINGS IN ACC.TO							
				ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E., UNI 10226-3			

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.
2	110	CS-FR	158849	HEX BUSHINGS 3/4X1/2 3/6000 NPT	ASTM A105N-09	RIVA ACCIAIO SPA	12355
ANALISI CHIMICA DI ACCIAIERIA							
				C% Mn% P% S%	Ti% Nb% Co% V%	N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT
				0,190 0,920 0,011 0,020	0,250 0,090 0,090 0,020	0,000 0,280 0,002 0,000	0,002 0,000 0,389
Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calma a							
CARATTERISTICHE MECCANICHE							
				Snervimento	Rottura	Resistenza	Prova idraulica
				Yield str.	Ten. Str.	Impact test	Pieg. H Test B Test
				369	530	35.30 68.60 HB 168	0
MECHANICAL PROPERTIES							
				N/mm(2)	530	35.30 68.60 HB 168	-50°C
RACCORDI SECONDO / FITTINGS IN ACC.TO							
				ANSI/ASME B1.20.1-83, ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E.			

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.
3	9	RL-SC	0979593	COUPLINGS 1 6000 GAS CIL./BSPP	ASTM A105N-09	RIVA ACCIAIO SPA	12355
ANALISI CHIMICA DI ACCIAIERIA							
				C% Mn% P% S%	Ti% Nb% Co% V%	N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT
				0,190 0,890 0,011 0,008	0,230 0,150 0,050 0,020	0,021 0,150 0,001 0,000	0,017 0,000 0,380
Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calma a							
CARATTERISTICHE MECCANICHE							
				Snervimento	Rottura	Resistenza	Prova idraulica
				Yield str.	Ten. Str.	Impact test	Pieg. H Test B Test
				315	507	47.1 49.4 50.5	0
MECHANICAL PROPERTIES							
				N/mm(2)	507	32.90 57.50 HB 142	-46°C
RACCORDI SECONDO / FITTINGS IN ACC.TO							
				ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E., UNI 10226-3			

I risultati dell'analisi chimica sono la corretta trascrizione del certificato emesso dall'acciaieria.
I risultati delle prove meccaniche sono la corretta trascrizione del certificato emesso dall'azienda che ha eseguito l'ultima trasformazione del materiale.
Dichiariamo che il prodotto fornito è conforme alle normative sopra indicate ed ai requisiti dell'ordine.
The results of the chemical analysis are a true and correct copy of the steel mill certificate.
The results of the mechanical tests are the correct records of the certificate issued from the company that has executed the last transformation of the material.
We state that the delivered product complies with the above standards and to the order's requirements

ENTE COLLAUDO / INSPECTOR



QUALITY CONTROL



CERTIFICATO DI COLLAUDO / TEST CERTIFICATE

Client/Customer FERRAMENTA INDUSTRIALE BONACINA SRL
Ordine cliente/Customer order n. ORDINE FAX 09/11/10
Documento di trasporto DT/VEND201000001703
Data/Date 16/11/2010
Certific. N. CT/CERT201000001798

Lista/Job 3518

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.	
13	2	PAPP	998260	COUPLINGS 1 3000 NPT	ASTM A182 F316-316L-09a	OLARBA	50291	
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0.014 1.730 0.036 0.028 0.300 16.500 10.000 2.000 0.000 0.000 0.000 0.160 0.000 0.024 0.000	SOLUBILIZZATO A 1050°C E TEMPRATO IN ACQUA		
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str. All. Corb. Durezza A1% Corb. Durezza E1% Red. of. Hardness	Prova idraulica Pieg. H/ Test B/ Test	Visual and dimensional check	**OK**
				MECHANICAL PROPERTIES	N/mm(2) 297 N/mm(2) 577 N/mm(2) 577 53.00 73.00 HB 163			
				RACCORDI SECONDO FITTINGS IN ACC. TO	ANSI/ASME B1.20.1-83, ASME B16.11-05, BS 3799-74, MSS SP-25			

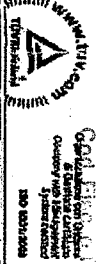
Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.	
14	100	RL-CI	32108	COUPLINGS 2 3000 NPT	ASTM A105N-09	RIVA ACCIAIO SPA	58863	
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Si% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0.180 0.960 0.010 0.027 0.250 0.080 0.050 0.010 0.010 0.150 0.000 0.000 0.000 0.000 0.370	Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calma		
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str.	Prova idraulica Pieg.	Visual and dimensional check	
				MECHANICAL PROPERTIES	N/mm(2) 325 N/mm(2) 494 N/mm(2) 31.90 58.70 HB 144	H Test B Test	**OK**	
				RACCORDI SECONDO FITTINGS IN ACC.TO	ANSI/ASME B1.20.1-83, ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E.			

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific/year date	Steel Mill	Steel mill cert. - forgemaster cert.	
15	42	RL-PG	0875232	COUPLINGS 1/2 3000 SW	ASTM A103N-09	RIVA ACCIAIO SPA	34855	
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE%	TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0.200 0.900 0.015 0.005 0.190 0.110 0.050 0.010 0.022 0.170 0.001 0.000 0.020 0.000 0.390	Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calm a		
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str. All. Corb. Durezza E1% Red. of. Hardness	Resilienza Impact test val/Jcm(2) Prova idraulica Pieg. H/ Test B/ Test	Visual and dimensional check	**OK**
				MECHANICAL PROPERTIES	N/mm(2) 320 N/mm(2) 517 N/mm(2) 32.40 56.50 HB 168			
				RACCORDI SECONDO FITTINGS IN ACC. TO	ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A103N SEC. II PART A 2007 L.E.			

I risultati dell'analisi chimica sono in corretta trascrizione del certificato emesso dall'acciaiera.
I risultati delle prove meccaniche sono in corretta trascrizione del certificato emesso dall'acciaiera.
Dichiaro che il prodotto fornito è conforme alle normative sopraindicate ed in requisiti dell'ordine.
The results of the chemical analysis are a true and correct copy of the steel mill certificate.
The results of the mechanical tests are the correct records of the certificate issued from the company that has executed the last transformation of the material.
We state that the delivered product complies with the above standards and to the order's requirements.

ENTE COLLAUDO / INSPECTOR

Certificato secondo / Certificate acc. to: EN 10204/3.1 - DIN 50093/3.1
ANNUAL BOOK ASTM SEZ. 1 VOL. 01.01.2009
MATERIAL MANUFACTURED AND APPROVED BY TUV RHEINLAND INDUSTRIAL SERVICE GMBH ACCORDING TO PED 97/23/EC
ANNEX 1 POINT 4.3 & AD 2000-W0



Viale Europa 100
Tel. 030-2000000
Fax 030-2000000
E-mail: info@lame-srl.it

QUALITY CONTROL

Contract No. 2110000249

Name of Customer: T.A.L.TUBI ACCIARDI LOMBARDIA S.P.A.

DESCRIPTION: SEAMLESS STEEL PIPES

TOTAL: 16923PIECES 1900BUNDLES 225.576MT

HENGWANG VALIN STEEL TUBE CO.,LTD
MILL TEST CERTIFICATE
EN10204 3.1.B
Date: SEP 6 2007
Page: 1/1

Add: 10 Dailinacuo, Hengyang City, Hunan, China
Tel and Fax: +86 734 8873739 8872942
Cable: 6993
P.C. 421001

TAL SPA

- THIS DOCUMENT IS REPRODUCED BY A COMPUTERIZED SYSTEM AND IS CONFORM TO THE ORIGINAL

SPEC. ASTM A106 B-2002/AS3B-2002/ASMINR SA106-280/4/ASME SA53B-2004 API 5L B X42 PSL-1-2004/NACE MR 0175-1999														Page: 1/1															
NO	BATCH NO	HEAT NO	STEEL GRADE	SIZE	BUNDLES	PIECES	METRE	CERTIFICATE NO. 07-1-09-4																					
								THEORETICAL WEIGHT (MT)	ACTUAL WEIGHT(MT)																				
1	578300433	07107719-3	X42	21.3 * 2.7760	10	2764	10884	20.98	N/A																				
2	578601300	07125676	X42	21.3 * 3.7360	10	2165	12950	21	N/A																				
3	578200443	07107721-3	X42	26.7 * 2.8760	12	2647	15282	26.775	N/A																				
4	578601262	07126877	X42	26.7 * 3.9160	14	2366	14196	31.178	N/A																				
5	578100421	07107719-3	X42	33.4 * 3.3860	1	106	636	1.581	N/A																				
	578300427	07107719-3	X42	33.4 * 3.3860	16	2338	14028	35.096	N/A																				
6	578601265	0712674	X42	33.4 * 4.5560	8	1005	8066	15.102	N/A																				
	578601271	0723982	X42	33.4 * 4.5560	14	1889	10134	32.797	N/A																				
7	578601263	0712678	X42	38.4 * 6.3560	3	335	2010	6.506	N/A																				
8	578601300	0712672	X42	42.2 * 3.5860	7	804	3024	15.347	N/A																				
DELIVERY																													
NO	CONDITION	EDDY CURRENT TEST		NONDESTRUCTIVE TEST		CHEMICAL COMPOSITION %																							
				C	SI	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	Nb/Al	CE													
1	NORMALIZED(900C-930C)	OK		0.17	0.40	0.88	0.013	0.006	0.06	0.03	0.03	0.09	0.01	0.003	0.001/N/A	0.335													
2	NORMALIZED(900C-930C)	OK		0.18	0.41	0.85	0.009	0.007	0.07	0.02	0.02	0.03	0.01	0.001	0.001/N/A	0.335													
3	NORMALIZED(900C-930C)	OK		0.18	0.43	0.88	0.015	0.008	0.07	0.02	0.03	0.01	0.01	0.005	0.001/N/A	0.338													
4	NORMALIZED(900C-930C)	OK		0.16	0.45	0.91	0.013	0.005	0.05	0.03	0.08	0.08	0.01	0.006	0.001/N/A	0.343													
5	NORMALIZED(900C-930C)	OK		0.17	0.42	0.87	0.017	0.003	0.06	0.03	0.09	0.07	0.01	0.003	0.001/N/A	0.331													
	NORMALIZED(900C-930C)	OK		0.17	0.42	0.86	0.014	0.003	0.06	0.03	0.09	0.06	0.01	0.003	0.001/N/A	0.335													
6	NORMALIZED(900C-930C)	OK		0.17	0.41	0.87	0.014	0.003	0.06	0.03	0.09	0.06	0.01	0.003	0.001/N/A	0.331													
	NORMALIZED(900C-930C)	OK		0.16	0.44	0.84	0.02	0.006	0.06	0.02	0.05	0.01	0.02	0.004	0.001/N/A	0.333													
7	NORMALIZED(900C-930C)	OK		0.17	0.43	0.86	0.02	0.005	0.08	0.02	0.04	0.01	0.02	0.003	0.001/N/A	0.334													
8	NORMALIZED(900C-930C)	OK		0.16	0.41	0.85	0.006	0.005	0.02	0.03	0.02	0.02	0.01	0.003	0.001/N/A	0.315													
b b (PSI)										TENSILE		δ (%) ELONG		ACTION		Tens (Direction)		ANY U)		Orientation		HARDNESS		HYDROSTATIC TEST		FLATTEN TEST		BEND TEST	
1	STRENGTH		YIELD STRENGTH		δ (%) ELONG		ACTION		Tens (Direction)		ANY U)		Orientation		HARDNESS		HYDROSTATIC TEST		FLATTEN TEST		BEND TEST								
2	70325		47125		32.5		N/A		N/A		N/A		N/A		HRC 4.5		360PSI		N/A		OK								
3	73225		49300		47		N/A		N/A		N/A		N/A		HRC 4.5		360PSI		N/A		OK								
4	75400		52200		30		N/A		N/A		N/A		N/A		HRC 5.5		360PSI		N/A		OK								
5	73550		48575		43		N/A		N/A		N/A		N/A		HRC 5.5		360PSI		N/A		OK								
	73550		50750		31		N/A		N/A		N/A		N/A		HRC 4.5		360PSI		N/A		OK								
	71775		49300		32		N/A		N/A		N/A		N/A		HRC 5.5		360PSI		N/A		OK								
6	72500		50025		31.5		N/A		N/A		N/A		N/A		HRC 5		360PSI		N/A		OK								
	77575		50025		40.5		N/A		N/A		N/A		N/A		HRC 4		360PSI		N/A		OK								
7	78750		53650		38		N/A		N/A		N/A		N/A		HRC 5		360PSI		N/A		OK								
	78300		50750		42		N/A		N/A		N/A		N/A		HRC 4.5		360PSI		N/A		OK								
8	77575		44950		33		N/A		N/A		N/A		N/A		HRC 4		360PSI		N/A		OK								
REMARKS: 1.MTC is issued by the manufacturer and Pipes meet the requirements of above mentioned Specs.														6. Material is fully flame-atomized, killed and Annealed.															

REMARKS: 1.MTC is issued by the manufacturer and Pipes meet the requirements of above mentioned Specs.
2. Pipes described herein also meet the requirements of ASTM/ASME A/SAS30-2003 and JIS No: TS 01 REV04 dated 03 JUL Y 2006.
3. Compliance to PED 97/23/EC and ASME B 36.10M
4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2') 10 For Pipes with OD ≥ 60.3mm, ends are bevelled according to ASME B16.25
A. For pipes ≤ 1" full length specimen were used;
B. For pipes > 1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4".
5. Material is fully ferrite-aluminum killed and ferrite-silicon killed
6. Visual and dimensional inspection are ok.
7. Visual and dimensional inspection are ok.
8. Inspection test to API 5L PSL-2
9. Manufacturer's Quality Management System to ISO9001:2000 Standard.
11. We hereby certify pipes are in conformity to purchase order requirements and applicable specification.
QUALITY MANAGER:

Industrial
S.R.L.
Gentile

Visit:
Tel. 0522 27710162
Fax. 0522 27710162
E-mail: info@tal.it

A. Z. 10

UW

Nome of Customer: TAL TUBI ACCIAIO LOMBARDA S.P.A.

LADLE ANALYSIS

Page: 151

HENGYANG VALIN STEEL TUBE CO., LTD

MILL TEST CERTIFICATE

EN10204 3.1.B

Date: SEP 6 2007

Add: 10 Dalirincan, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 42100)

JHEATNO	C	SI	NW	P	S	CU	MK	KR	HQ	V	AL	TI	Mb	CSE
0710719-3	X42	0.18	0.40 0.81	0.012	0.005	0.07	0.03	0.01	0.01	0.01	0.00	0.000	0.000	0.378
712676	X42	0.17	0.43 0.87	0.015	0.005	0.06	0.02	0.06	0.02	0.02	0.00	0.005	0.001	0.378
0710721-3	X42	0.17	0.41 0.85	0.016	0.008	0.07	0.02	0.06	0.06	0.01	0.00	0.004	0.001	0.344
712677	X42	0.17	0.43 0.86	0.017	0.005	0.08	0.02	0.05	0.01	0.02	0.00	0.006	0.001	0.335
0710719-3	X42	0.18	0.40 0.81	0.012	0.005	0.07	0.02	0.01	0.01	0.01	0.00	0.000	0.000	0.378
0710718-3	X42	0.18	0.40 0.81	0.012	0.005	0.07	0.02	0.01	0.01	0.01	0.00	0.000	0.000	0.378
0710719-3	X42	0.18	0.40 0.81	0.012	0.005	0.07	0.02	0.01	0.01	0.01	0.00	0.000	0.000	0.378
712674	X42	0.16	0.45 0.82	0.020	0.005	0.07	0.02	0.08	0.02	0.02	0.00	0.006	0.001	0.327
712682	X42	0.17	0.43 0.85	0.010	0.005	0.01	0.02	0.04	0.02	0.02	0.00	0.003	0.001	0.314
712678	X42	0.16	0.42 0.85	0.008	0.006	0.06	0.02	0.02	0.01	0.02	0.00	0.004	0.001	0.319
712672	X42	0.17	0.41 0.86	0.016	0.006	0.07	0.02	0.06	0.06	0.01	0.00	0.004	0.001	0.344

- THIS DOCUMENT IS REPRODUCED BY A COMPUTERIZED SYSTEM AND IS CONFORM TO THE ORIGINAL



Inšpekčný certifikát
Inspection certificate
EN 10204:2004/3.1

Číslo
Number

50872/1/2010

List č. - Sheet No.: 1 / 3

Č.ext.obj. - External order No.:

0A2297

Číslo položky - Item number:

4

Číslo zákazky výrobcu - Manufacturer's works order number:

112174/1/2 2043176

Číslo dopravného prostriedku - Transport No.:

BR467AV BR822YB

Číslo ložného listu - Loading Bill No.:

352598

Číslo avíza - Dispatch note:

3025515

Výrobok - Product:

Rúry oceľové bezošvové, valcované za tepla - rúry pre potrubia pre horľavé médiá
Seamless hot finished steel tubes - pipelines for combustible fluids

Vonkajší priemer - Outside diameter:

114.300 mm

Hrúbka steny - Wall thickness:

6.020 mm

Dĺžka - Length:

6000.000 mm [-0 +100] mm

Počet kusov - Number of pieces:

61

Celková dĺžka - Total length:

366.00 m

Celková hmotnosť - Total mass:

6028.00 kg

Via
Tel. 021 48 545 40 70, 445 40 71
Cod. Fisc. P. IVA 00727710162

Material - Material:

Grade B ASTM A 106/2008/, Grade B ASME SA-106/SA-106M/2007/, Grade B ASTM A 53 / A 53M/2007/,

Grade B ASME SA-53/SA-53M/2007/, B/PSL1 API spec.5L/ISO 3183/2008/, X42/PSL1 API spec.5L/ISO 3183/2008/

Stav dodania - Products as delivered condition:

N

Technické predpisy - Technical requirements/Demand:

ASTM A 53/A 53M-07, ASTM A 530/A 530M-04a, ASTM A106/A106M-08, ASME SA-106/SA-106M E07,
ASME SA-53/SA-53M E07, ASME SA-530/SA-530M E07, ASME B 36.10M, API spec. 5L/ISO 3183/08,
TS 01 rev. 04

Číslo stavby Cat number	Počet kusov Number of pieces	Dĺžka Length [m]	Hmotnosť Mass [kg]	Druh stavby Refining process
4625	61	366	6028	E

Druh ocele - Steel grade:

úplne uhl'udnená oceľ hliníkom - fully killed steel with Aluminium

Úprava povrchu - Surface protection:

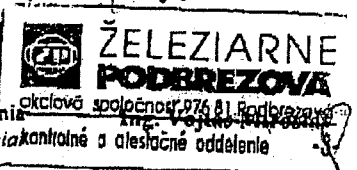
Bez úpravy povrchu (neolejované) - Without surface treatment (without oil)

Ferramenta Industriale
S.p.A.
Svilva Cantini

Miesto v Podbrezovej
Location cell

Dátum 09.11.2010
Date

Vedúci kontrolného a atestačného oddelenia
Engineering inspection office



ŽELEZIARNE PODBREZOVÁ, s.r.o., 976 81 Podbrezová, SLOVAKIA
Telefón/Phone: +421 48 545 40 70, 445 40 71. Fax: +421 48 545 40 72. www.ozeloveary.sk, www.prodube.sk
IČO 31 562 141, IČ DPH/VAT N: SK020498704, Bankové spojenie/Bank account: Citibank (Slovakia) a.s., N° 2001940300/134
Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Bratislava Bystrica, oddiel Sa, vložka číslo 69/S

Chemické zloženie - Chemical composition:

Číslo stavby Cast number	C [%]	Mn [%]	Si [%]	P [%]	S [%]	Cu [%]	Cr [%]	Ni [%]	Al [%]	Mo [%]	Ti [%]	V [%]	Nb [%]
	Predpis - Requirements												
	min.			0.15									
max.	0.20	1.06	0.35	0.020	0.010	0.30	0.30	0.40	0.015	0.12	0.040	0.030	0.019
4625	0.12	0.66	0.23	0.011	0.006	0.19	0.02	0.03	0.015	0.00	0.002	0.002	<0.000

Číslo stavby Cast number	Exp.1 [%]		Exp.2 [%]	
	min.	max.	min.	max.
	0.40	0.150	0.25	0.004

Exp.1 = C + Mn/6 + (V+Mo+Cr)/5 + (Ni+Cu)/15

Exp.2 = V + Nb + Ti

Poznámky - Remarks

Nb+V max.0,06%

Výrobková analýza - Product analysis:

Číslo stavby Cast number		C [%]	Mn [%]	Si [%]	P [%]	S [%]	Cu [%]	Cr [%]	Ni [%]	Al [%]	Mo [%]	Ti [%]	V [%]	Nb [%]
4625	1	0.12	0.64	0.23	0.011	0.007	0.19	0.03	0.03	0.013	<0.01	0.001	0.001	<0.001
4625	2	0.12	0.65	0.23	0.011	0.007	0.19	0.03	0.03	0.013	<0.01	0.001	0.001	<0.001

Skúška ťahom - Tensile test: 20 °C

C. Nr	Číslo stavby Cast number	Vzorka č. Test No.	Rozmery Dimensions [mm]	Smer odberu vzorky Direction of the test piece	Predpis - Requirements:		
					min.	max.	
					290	415	
1	4625	A047057/10	25.00x5.74	L	367	459	40.2

* Ťažnosť - Elongation : min. (1944*So**0.2)/(Rm**0.9)

Skúška rázom v ohybe Charpy - Charpy impact test: ASTM A 370/05

C. Nr	Číslo stavby Cast number	Vzorka č. Test No.	Predpis Requirements min.-max. [J]	Jednotlivé hodnoty Individual values [J]	Priemerná hodnota Mean value [J]	Teplota skúšania Test temperature [°C]
1	4625	A047056/10	KV 40.0 - ---	140.0,150.0,154.0	148.0	-15
C. Nr	Vzorka č. Test No.	Rozmery Dimensions [mm]	Smer odberu vzorky Direction of the test piece	Výsledky - Results		
				Výsledky - Results		
1	A047056/10	10.00x5.00	L			

Skúška stlačením vyhovela.
Flattening test without objections.

Miesto v Podbrezovej
Location cell

Dátum 09.11.2010
Date

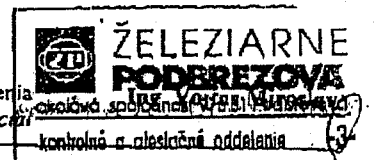
Vedúci kontrolného a atestačného oddelenia
Engineering inspection official



ŽELEZIARNE PODBREZOVÁ, s.r.o., 076 81 Podbrezová, SLOVAKIA

Telefón/Phone: +421 48 645 40 78, 645 40 71. Fax: +421 48 645 40 72, www.zeleziarne.sk, www.slcsluhs.sk

IČO 31 562 141, IČ DPH/VAT N° SK2026438704, úsekové spojenie/Úsek account: Citibank (Slovakia) s.r.o., IČ 2001940300/8130
Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Banská Bystrica, oddiel Ea, vložka číslo 69/S





Inšpekčný certifikát
Inspection certificate
EN 10204:2004/3.1

Číslo
Number 50872/1/2010

List č. - Sheet No.: 3 / 3

Skúška vodným tlakom vyhovela.
Hydraulic pressure test without objections.

STN EN 10208-1 19.3 MPa 5.00 sec

Skúška vírivými prúdmi vyhovela
Eddy current test without objections

ASTM E-309 100.00 %

Výrobky spĺňajú základné požiadavky na materiály pre tlakové zariadenia uvedené v Prílohe I Smernice pre tlakové zariadenia (PED) 97/23 EC.
The products are in compliance with the material basic requirements according to the Pressure Equipment Directive (PED) 97/23 EC, Annex I.
NACE MR 01-75-2003, HRC max.22.

Potvrdzujeme, že minimálne hodnoty medze klzu za zvýšenej teploty sa zhodujú s minimálnymi hodnotami medze klzu pre všetky zvýšené teploty, ktoré sú predpísané normou ASTM ASME II, časť D, tabuľka Y1.
We certify that min. hot yield point values are in compliance with the min. hot yield point values for all the elevated temperatures prescribed by ASTM ASME II, part D, table Y1.

Tažnosť po roztrhnutí podľa PED, príloha 7.5 je väčšia ako 14% pri $Lo: 5.65\sqrt{So}$. Teplota valcovania je 780°C – 980°C.
Elongation after rupture acc. to PED, Annex 7.5 (not less than 14%) with $Lo: 5.65\sqrt{So}$. Temperature of rolling 780°C – 980°C.

Všetky výrobky vyhovujú vyššie uvedeným normám a požiadavkám v objednávke.
All products meet requirements of above mentioned standards and requirements specified in the order.

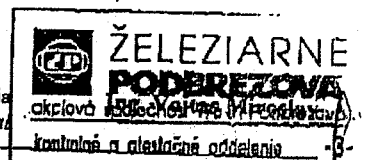
Vizuálna kontrola a rozmery vyhoveli (100 %).
Visual inspection and dimensional check without objections (100 %).

FEI
Visto E
Tel. 021 43 645 40 70, 645 40 71
Ged. Fisca. e P.IVA 00/2771010

Miesto v Podbrezovej
Location cell

Dátum 09.11.2010
Date

Vedúci kontrolného a atestačného oddelenia
Engineering inspection official



ŽELEZIARNE PODBREZOVÁ, s.r.o., 076 11 Podbrezová, SLOVAKIA

Telefón/Phone: +421 43 645 40 70, 645 40 71, Fax: +421 43 645 40 72, www.pcclovecny.sk, www.pcclovecny.sk

IČO 31 562 141, IČ DPH/VAT N°: SK2020459704, Banková spojitost/Bank account: Citibank (Slovakia) s.r.o. N° ZU019403nn/8130

Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Banská Bystrica, oddiel Sn, vložka číslo 695



Inšpekčný certifikát
Inspection certificate
EN 10204:2004/3.1

Číslo
Number

38853/1/2010

List č. - Sheet No.: 1 / 3

Č. ext. obj. - External order No.:
0A1541

Číslo položky - Item number:
4

Číslo zákazky výrobcu - Manufacturer's works order number:
109208/1/1 3033104

Číslo dopravného prostriedku - Transport No.:
ZM55SAT ZM55SYC

Číslo ložného listu - Loading Bill No.:
351384

Číslo avíza - Dispatch note:
3024330

Výrobok - Product:

Rúry oceľové bezošvé, valcované za tepla - rúry pre potrubia pre horľavé média
Seamless hot finished steel tubes - pipelines for combustible fluids

Vonkajší priemer - Outside diameter: 33.400 mm
Hrúbka steny - Wall thickness: 3.380 mm
Dĺžka - Length: 6000.000 mm [-0 +100] mm
Počet kusov - Number of pieces: 393
Celková dĺžka - Total length: 2358.00 m
Celková hmotnosť - Total mass: 6016.00 kg

Material - Material:

Grade B ASTM A 106/2008/, Grade B ASME SA-106/2007/, Grade B ASTM A 53 / A 53M/2007/,
Grade B ASME SA-53/2007/, B/PSL1 API spec.5L/ISO 3183/2008/, X42/PSL1 API spec.5L/ISO 3183/2008/

Trieda - Class: PSL1

Stav dodania - Products as delivered condition:

n

Technické predpisy - Technical requirements/Demand:

ASTM A 53/A 53M-07, ASTM A 530/A 530M-04a, ASTM A106/A106M-08, ASME SA-106 E07,
ASME SA-53/SA-53M E07, ASME SA-530/SA-530M E07, API spec. 5L/ISO 3183/08, ASME B 36.10M,
TS 01 rev. 04

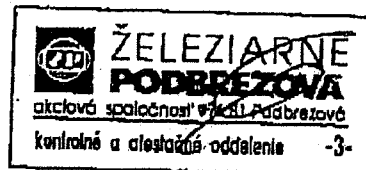
Číslo tvrbý Cart number	Počet kusov Number of pieces	Dĺžka Length [m]	Hmotnosť Mass [kg]	Druh levanis Steelmaking process
2933	393	2358	6016	E

Druh ocele - Steel grade:

úplne ukladnená oceľ hliníkom - fully killed steel with Aluminium

Úprava povrchu - Surface protection:

Bez úpravy povrchu (neolejované) - Without surface treatment (without oil)



Miesto v Podbrezovej
Location s.n.a.

Dátum 03.09.2010
Date

Vedúci kontrolného a atestačného oddelenia
Engineering inspection official

Ing. Vojtas Miroslav



ŽELEZIARNE PODBREZOVÁ, s.r.o., 976 01 Podbrezová, SLOVAKIA

Telefón/Phone: +421 48 645 48 70, 645 48 71, Fax: +421 48 645 48 72, www.ozelovary.sk, www.steelube.sk

IČO 31 962 141, IČ DPIS/VAT N: SK2020488704, Bankové spojenie/Bank account: Citibank (Slovakia) s.a. N° 2001940300/6150
Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Banská Bystrica, oddiel S4, vložka číslo 69/5

Chemické zloženie - Chemical composition:

Číslo tavby Cast number		C	Mn	Si	P	S	Cu	Cr	Ni	Al	Mo	Ti	V	Nb
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
		Predpis - Requirements												
		min.												
		max.	0.20	1.06	0.35	0.020	0.010	0.30	0.30	0.40	0.015	0.12	0.040	0.030
2933			0.13	0.67	0.24	0.015	0.004	0.24	0.05	0.08	0.015	0.01	0.002	0.004
														<0.001

Číslo tavby Cast number		Exp.1	Exp.2
		[%]	[%]
		min.	max.
		0.40	0.150
2933		0.28	0.007

Exp.1 = C + Mn/6 + (V+Mo+Cr)/5 + (Ni+Cu)/15

Exp.2 = V + Nb + Ti

Poznámky - Remarks

V+Nb max.0.06%

Výrobová analýza - Product analysis:

Číslo tavby Cast number		C	Mn	Si	P	S	Cu	Cr	Ni	Al	Mo	Ti	V	Nb
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
2933	1	0.15	0.66	0.22	0.013	0.007	0.26	0.05	0.11	0.011	0.02	0.001	0.003	<0.001
2933	2	0.15	0.66	0.22	0.013	0.007	0.25	0.05	0.11	0.011	0.02	0.001	0.003	<0.001

Skúška ťahom - Tensile test: 20 °C

C. Nr	Číslo tavby Cast number	Vzorka č. Test No.	Rozmery Dimensions [mm]	Smer odberu vzorky Direction of the test piece	Medza klzu Yield point - Proof stress		Pevnosť v ťahu Tensile strength	Ťažnosť Elongation
					ReH			
					[MPa]		Rm	Lo= 2" [%]
					min.	290	415	30.0
					max.	—	—	—
1	2933	A032294/10	33.60x3.45	L		392	520	46.6

Skúška ohybom vyhovela.
Bend test without objections.

Skúška vodným tlakom vyhovela.
Hydraulic pressure test without objections.

STN EN 10208-1 20.7 MPa 5.00 sec

Skúška vŕhivými prúdmi vyhovela
Eddy current test without objections

ASTM E-309 100.00 %

Výroba
Tel. číslo
Cod. Fisc. e P. IVA 0072771010

Výrobky spĺňajú základné požiadavky na materiály pre tlakové zariadenia uvedené v Prílohe I Smernice pre tlakové zariadenia (PED) 97/23 EC.
The products are in compliance with the material basic requirements according to the Pressure Equipment Directive (PED) 97/23 EC, Annex I.
NACE MR 01-75-2003, HRC max.22.

Potvrďujeme, že minimálne hodnoty medze klzu za zvýšenej teploty sa zhodujú s minimálnymi hodnotami medze klzu pre všetky zvýšené teploty, ktoré sú predpísané normou ASTM ASME II, časť D, tabuľka Y1.

We certify that min. hot yield point values are in compliance with the min. hot yield point values for all the elevated temperatures prescribed by ASTM ASME II, part D, table Y1.

Miesto v Podbrezovej
Location

Dátum 03.09.2010
Date

Vedúci kontrolného a
Engineering inspection officer
Kontrolné a inšpekčné oddelenie -3-
Vojtas Miroslav



ŽELEZIARNE PODBREZOVÁ, a.s., 076 81 Podbrezová, SLOVAKIA

Telefón/Phone: +421 43 645 48 70, 645 40 71, Fax: +421 43 645 40 72, www.ocelovary.sk, www.siedruba.sk

IČO 31 552 141, IČ DPH/VAT N: SK2120408784, Bankové spojenie/Bank account: Citibank (Slovensko) a.s. N: 31050000000000000000

Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Bratislava, oddiel 5a, vložka číslo 69/S

Spoločnosť je zapísaná v Obchodnom registri Okresného súdu Bratislava, oddiel Ba, vložka číslo 63/5



CERTIFICATO DI COLLAUDO / TEST CERTIFICATE

Cliente/Customer FERRAMENTA INDUSTRIALE BONACINA SRL
Ordine cliente/Customer order n. ORDINE TEL DEL 15/09/10
Documento di trasporto DTVEND201000001428

RACCORDERIA FORGIATA E DERIVAZIONI
FORGED STEEL FITTINGS AND OUTLETS

Lista/Job

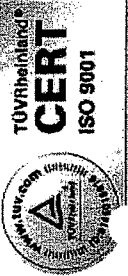
Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific./year date	Steel Mill	Steel mill cert. - forgemaster cert.
1	30	MF74	09/78750	90DEG ELBOWS 1/2" 3000 SW	ASTM A105N-09	RIVA ACCIAIO SPA	16604 - 4757
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Si% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE% TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0,195 0,890 0,010 0,008 0,190 0,070 0,040 0,010 0,140 0,002 0,000 0,018 0,000 0,360	Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calm a	Visual and dimensional check
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str.	Prova idraulica Pieg. H.Test B.Test	**OK**
				MECHANICAL PROPERTIES	N/mm(2) 304 N/mm(2) 496 N/mm(2) 496	46 52 47 -46°C	0
				RACCORDI SECONDO FITTINGS IN ACC.TO ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E.			

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific./year date	Steel Mill	Steel mill cert. - forgemaster cert.
2	50	MF80	09/79145	90DEG ELBOWS 3/4" 3000 SW	ASTM A105N-09	RIVA ACCIAIO SPA	16605 - 4812
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Si% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE% TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0,200 0,900 0,012 0,010 0,190 0,060 0,040 0,010 0,120 0,001 0,000 0,016 0,000 0,370	Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calm a	Visual and dimensional check
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str.	Prova idraulica Pieg. H.Test B.Test	**OK**
				MECHANICAL PROPERTIES	N/mm(2) 309 N/mm(2) 508 N/mm(2) 508	48 49 46 -46°C	0
				RACCORDI SECONDO FITTINGS IN ACC.TO ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E.			

Item	Quantity	Heat code	Heat Number	Description	Type and mat. specific./year date	Steel Mill	Steel mill cert. - forgemaster cert.
3	100	MF49	08/76838	90DEG ELBOWS 1 3000 SW	ASTM A105N-09	RIVA ACCIAIO SPA	983 - 4644
				ANALISI CHIMICA DI ACCIAIERIA	C% Mn% P% S% Si% Cr% Ni% Mo% Ti% Cu% Nb% Co% V% N% CE% TRATTAMENTO TERMICO / HEAT TREATMENT		
				STEEL MILL CHEMICAL ANALYSIS	0,200 0,870 0,008 0,008 0,240 0,080 0,040 0,010 0,170 0,002 0,000 0,019 0,000 0,380	Forno Elettrico - Normalizzato a 900°C e raffreddato in aria calm a	Visual and dimensional check
				CARATTERISTICHE MECCANICHE	Snervamento Yield str. Rottura Ten. Str.	Prova idraulica Pieg. H.Test B.Test	**OK**
				MECHANICAL PROPERTIES	N/mm(2) 310 N/mm(2) 503 N/mm(2) 503	41.7 45.6 40.4 -46°C	0
				RACCORDI SECONDO FITTINGS IN ACC.TO ASME B16.11-05, BS 3799-74, MSS SP-25, ASME SA/A105N SEC. II PART A 2007 L.E.			

I risultati dell'analisi chimica sono la corretta trascrizione del certificato emesso dall'acciaieria.
I risultati delle prove meccaniche sono la corretta trascrizione del certificato emesso dall'azienda che ha eseguito l'ultima trasformazione del materiale.
Dichiariamo che il prodotto fornito è conforme alle normative sopraindicate ed ai requisiti dell'ordine.
The results of the chemical analysis are a true and correct copy of the steel mill certificate.
The results of the mechanical tests are the correct records of the certificate issued from the company that has executed the last transformation of the material.
We state that the delivered product complies with the above standards and to the order's requirements.

ENTE COLLAUDO / INSPECTOR



C. QUALITY CONTROL

CONFERMAZIONE
AUTOGRAFICA



SEDE LEGALE
22035 ERBA [Como] Italy
Via Volontari della Libertà, 1

SEDE AMMINISTRATIVA E STABILIMENTO*
22044 INVERIGO [Como] Italy
Via Magni, 113 [Fraz. Carpanea]
Tel. +39 031 359110
Fax +39 031 605767
R.E.A. Como 0163943
quality.cff@farmas.com

CERTIFICATO DI COLLAUDO

FERRAMENTA INDUSTRIALE BONACINA SRL

V.I.E EUROPA 2G

24048 CURNASCO DI TREVIOLO

BG IT

S. Ord. N.

Certificato n. 3992

Del

7.11.2010

7 11 2010

Dei

DDT N.

V.I.E EUROPA 2G

ABUJIMENTS

ADMINISTRATIVE

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Flanges & Fittings Italia S.p.A.

**COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY BVQI ISO 9001:2000**

I risultati delle analisi chimiche e prove meccaniche sono una copia conforme all'originale dei certificati 3.1 emessi dal produttore e/o fornitore

Pag. 1 - 2

COD. COL.	COLATA	POS.	VS. ORDINE	Q.TA'	DESCRIZIONE	DIM.IN ACC.A										VISIVO E DIMENS.									
						C%	Si%	Mn%	S%	P%	Cr%	Ni%	Mo%	Ti%	Cu%	V%	Nb%	N%	Al%	C.E.%	ALTRI				
129A	J5K4129	001	FAX	8,00	WPB ELBOWS 90SR 6 SCH.XS	0,210	0,230	0,500	0,009	0,012	0,030	0,050	0,030	0,000	0,020	0,001	0,002	0,000	0,000	0,310					
53F00317	35310	002	FAX	8,00	WPB ELBOWS 48LR 4 SCH.STD	0,180	0,240	0,830	0,005	0,010	0,040	0,030	0,020	0,000	0,040	0,003	0,001	0,000	0,000	0,336					
505	843	003	FAX	25,00	WPB CONC.RED. 4X3 SCH.STD SA234	0,200	0,270	0,510	0,024	0,015	0,007	0,001	0,010	0,000	0,005	0,001	0,000	0,000	0,000	0,289					
968A	J8L1968	004	FAX	10,00	WPB ELBOWS 90LR 2 SCH.STD SA234	0,200	0,230	0,480	0,009	0,002	0,020	0,020	0,010	0,000	0,020	0,000	0,000	0,000	0,000	0,289					
023A	J7L0023	005	FAX	16,00	WPB TEE 3 SCH.STD SA234	0,180	0,200	0,530	0,009	0,016	0,030	0,020	0,010	0,000	0,040	0,000	0,000	0,000	0,000	0,280					
53G00007	J9K6374	006	FAX	10,00	WPB ELBOWS 90LR 4 SCH.STD SA234	0,180	0,160	0,840	0,004	0,012	0,050	0,020	0,010	0,000	0,020	0,000	0,000	0,000	0,333						
51N00034-1	28442	007	FAX	25,00	WPB ELBOWS 90LR 3 SCH.STD SA234	0,210	0,180	0,660	0,001	0,010	0,040	0,040	0,040	0,000	0,050	0,001	0,001	0,000	0,344						
	25951	008	FAX	5,00	WPB TEE 4X3 SCH.STD SA234	0,120	0,220	0,840	0,001	0,010	0,040	0,020	0,040	0,000	0,031	0,001	0,001	0,000	0,017	0,280					
51M10085-1	J5L7362	010	FAX	3,00	WPB CONC.RED. 4X2 1/2 SCH.STD SA234	0,198	0,230	0,550	0,003	0,008	0,030	0,030	0,010	0,000	0,060	0,003	0,000	0,000	0,017	0,304					
T887	A68916	011	FAX	5,00	WPB TEE 5X4 SCH.STD SA234	0,170	0,170	0,620	0,006	0,012	0,080	0,020	0,010	0,000	0,030	0,000	0,002	0,000	0,000	0,295					
	856658	012	FAX	24,00	304/304L ELBOWS 90SR 4 40S S	0,014	0,440	1,670	0,001	0,030	18,150	9,190	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000					
					304L CAPS 1/4 3000 NPT	0,024	0,340	1,580	0,024	0,030	18,000	8,200	0,000	0,000	0,000	0,000	0,000	0,083	0,000	0,000					
COD. COL.	COLATA	POS.	TRATT. TERM. (°)	FORMING	SML W WX	SNERVAMENTO N/mm2 >=0,2%	ROTTURA N/mm2 >=	ALLUNGAMENTO %>=	CONTRAZIONE %>=	DUREZZA Hb	RESILIENZA - JOULE			Sec. ASTM A370			°C			Ns.Rif.					
129A	J5K4129	001	3	HOT		283,0	491,0	40,0	0,0	154,0 - 156,0	KV			KV			-10			F10-13A					
53F00317	35310	002	3		SMLS	304,0	480,0	35,0	0,0	137,0 - 151,0										F23-37					
505	843	003	3			360,0	485,0	36,0	0,0	146,0										VARIE 09/1					
968A	J8L1968	004	3	HOT	SMLS	294,0	482,3	41,0	0,0	139,0										F4-35/47					
023A	J7L0023	005	3	HOT	SMLS	314,3	507,5	41,0	0,0	137,0 - 145,0										F4-8					
53G00007	J9K6374	006	3	HOT	SMLS	313,0	485,0	40,0	0,0	139,0 - 146,0										F23-80					
51N00034-1	28442	007	3	HOT	SMLS	319,0	486,0	31,0	0,0	111,0 - 115,0										F19-4/28					
	25951	008	3	HOT	SMLS	292,0	456,0	33,0	0,0	145,0 - 145,0										F16-53/54					
	804	009	3		SMLS	325,0	475,0	34,0	0,0	144,0 - 144,0										VARIE01/10					
51M10085-1	J5L7362	010	3		SMLS	252,0	456,0	37,0	0,0	155,0 - 158,0										F19-21					
T887	A68916	011	6	HOT	SMLS	259,0	602,0	52,0	0,0	156,0 - 164,0										F12-160					
	856658	012	6			496,0	659,0	49,0	72,0	186,0 - 192,0										041279					

NOTE	ASME/ANSI - MSS SP - NACE MR0175/03 - PED 97/27/EC - NACE MR0103/03 - MATERIALE FORNITO	UFFICIO CONTROL QUALITA'	ENTE UFFICIALE DI COLLAUDO	COLLAUDO ESTERNO
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QUALITY CONTROL

DE

(*) 1=Prodotto a caldo tra 620°-980° 2=Tratt. di distensione 3=Normalizzato 4=Normalizzato e rinvenuto
5=Temprato e rinvenuto 6=Solubilizzato 7=Vedi descrizione

2010

Tel. 003214 411111
Cod. Fisc. e P. IVA 001277