

Type of inspection document
Inspection certificate 3.1
acc. DIN EN 10204:2005-01

(A01 - A10, Z02)

Mannesmann Fuchs Rohr GmbH . Postfach 17 13 . D-59061 Hamm

Stahlrohr GmbH
Am Blumenkampshof 67
DE-47059 Duisburg

Document number	Date	Page
07/05594	08.12.2007	1/ 4
To delivery note no.	Delivery date	
14045995	04.12.2007	
Supplier order no.	Destination	
140003615	Germany	
Inspection representative	Manufacturer's works	
Dr. Löbbbe/Meyer	Hamm	
Tel.	Fax	
02381/420-450	02381/420-454	

Purchaser order number.	Date of order	Consignee	Consignee order number
BS001783	29.11.2007		

(B01 - B14)

Item	Article/Dimension (mm) (ft)	...quantitypieces	...length/m ..length/ft	...weight/kg ..weight/lbs
1	10066698	20	232.970 764.337	19782 43612
406,4x 8,8x12000 P235/GtB/S 10217/5L/ RS				



Steel pipes
high frequency longitudinally inductive welded
Except maximum tensile strength
DIN EN10217-2/TCL, Edit. 04.05
Manufacturing route - No.1
API 5L, PSL 1 edit. 10.04
EN 10219-1 /-2 edit. 07.06
AD 2000-Merkblatt W 4, edit. 02.05
Druckbehälter Richtlinie DGRL 97/23/EG
Charpy testing acc. to EN 10217-2 TCL
(Option 4)
P235 GH / GradeB / S235 JRH
Inspection certificate 3.1 acc. to DIN EN 10204 01.2005
Ends bevelled, angle 30 degrees (tolerance + 5 / - 0 degrees), root
face 1,6 + / - 0,8 mm
without end protection
inside and outside bare

(C70 - C93)
Chemical composition/Tadle analysis %

	C	Si	Mn	P	S	Al	Cu	Cr	Ni	Mo	V	Ti	Nb	N	EF1
min.						0.020									
max.	0.160	0.350	1.20	0.025	0.0300									0.0090	0.15
Heat-no.	E														
0307622224	2	0.150	0.180	0.52	0.014	0.0040	0.034	0.030	0.09	0.06	0.010	0.000	0.003	0.001	0.0043
0307658565	2	0.140	0.170	0.52	0.007	0.0020	0.039	0.030	0.09	0.06	0.010	0.000	0.003	0.001	0.0044

E = Steelmaking process:

2 = Oxygen

Formulas:

EF1: V + Ti + Nb

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(C70 - C93)

Chemical composition/Check analysis %

	C	Si	Mn	P	S	Al	Cu	Cr	Ni	Mo	V	Ti	Nb	N	EF1
min.						0.020									
max.	0.180	0.400	1.20	0.030	0.0250									0.0090	0.15
Heat-no.															
0307622224	0.146	0.178	0.49	0.014	0.0046	0.035	0.030	0.08	0.06	0.015	0.001	0.001	0.001	0.0066	0.00
0307622224	0.140	0.174	0.49	0.013	0.0046	0.035	0.030	0.08	0.06	0.014	0.001	0.001	0.001	0.0057	0.00
0307658565	0.140	0.172	0.49	0.008	0.0022	0.043	0.030	0.08	0.05	0.014	0.001	0.002	0.001	0.0063	0.00
0307658565	0.169	0.167	0.48	0.008	0.0019	0.042	0.030	0.08	0.05	0.014	0.001	0.002	0.001	0.0046	0.00

Formula:

EF1: V + Ti + Nb

(C00 - C04, C10 - C14)

Tensile tests

Order number	Test temperature	Yield strength	Tensile strength	RP/RM	Elongation	Reduction
90037702/1	RT	Rt 0,5 MPA	MPA		%	%
Requirements				A 2"		
Minimum		241	414		28.0	
Maximum						

Heat-no.	Sample-no	Pipe-no.	Orientation					Width	Thickn.
0307622224	000 1		2	332	473	0.70	43.0	40.10	8.70
0307658565	000 3		2	346	472	0.73	44.0	40.15	8.70

(C00 - C04, C10 - C14)

Tensile tests

Order number	Test temperature	Yield strength	Tensile strength	RP/RM	Elongation	Reduction
90037702/2	RT	MPA	MPA		%	%
Requirements				A 2"		
Minimum			414			
Maximum						

Heat-no.	Sample-no	Pipe-no.	Orientation					Width	Thickn.
0307622224	000 1		3	0	535	0.00	0.0	40.15	8.70
0307658565	000 3		3	0	530	0.00	0.0	40.20	8.30

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(C00 - C04, C10 - C14)

Tensile tests

Order number	Test temperature	Yield strength	Tensile strength	RP/MP Elongation	Reduction
90037702/3	RT	ReH MPA	MPA	A 5	%
Requirements					
Minimum		235	360	24.0	
Maximum			500		

Heat-no.	Sample-no	Pipe-no.	Orientation	Yield strength	Tensile strength	RP/MP Elongation	Reduction	Width	Thickn.
0307622224	CUO 1		2	337	470	0.72 30.6		25.20	8.65
0307658565	CUO 3		2	368	470	0.78 33.3		25.25	8.60

Location of the sample and direction of the test piece:

2 = base material, transverse
3 = weld, transverse

(C00 - C04, C40 - C44)

Impact tests:

Order-no.:	Requirements	Temperature	Single value min. (J)	Average min. (J)	Shear area(%)
90037702/1		0 Grad C	14	18	

Heat-number.	Sample-no.	Pipe-no.	Orientat./-shape	Val.1	Val.2	Val.3	Average	SA1	SA2	SA3
0307622224	CUO 1		2 44	77	90	80	82	0	0	0
0307658565	CUO 3		2 44	95	106	131	111	0	0	0

Location of the sample and direction of the test piece: shape of test specimen:

2 = base material, transverse 44 = Charpy - V 2/3

(C50 - C69, D01 - D51)

Results of other check:

Flattening test:	: Satisfactory
Visual and dimensional inspection:	: Satisfactory
Hydrostatic test,	: 70 bar, holding time 5 s, Satisfactory
Heat treatment: Weld zone induction annealed	: .

(A04, B06)

Marking of products:

Hard stamped outside at one end:
MW-HA Monogram * EN 10217-2 * P235GH * TC1 * Heat-No. * WA * Inspection-No. *

Paint marking inside at one end:
MW-HA Monogram * 5L0256 * API-Monogram * mmy * 406,4 x 8,80 * B * PSL 1 * E * Lengthm ;

Mannesmann Fuchs Rohr GmbH
Werk Hamm
Kissinger Weg , D-59067 Hamm
Telefon (02381) 420-400/401
Telefax (02381) 420-404

Geschäftsführer:
Marc Rasquin (Vorsitzender)
Ulrich Kill
Jörn Winkels

Sitz der Gesellschaft: Siegen
Eintragung im Handelsregister:
Amtsgericht Siegen HRB 1435



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BS001783

Date of order
29.11.2007

Consignee

Consignee order number

(A04, B06)

Marking of products:

Marking with an adhesive label inside at one end:

Mannesmann Fuchs Rohr GmbH * WA * EN 10219 * S235JRH * 406,4 x 8,80 mm x pipe length in m * 140003615/001 *

(B07)

Identification of the product - tube list

inspection no.	heat-no.	length(m)	weight(KG)
104	658565	12.010	1020
105	658565	12.010	1024
106	622224	12.010	1018
107	622224	10.310	874
108	622224	12.010	1020
109	622224	12.010	1022
110	658565	12.010	1022
111	658565	12.010	1022
112	658565	12.010	1020
113	658565	12.010	1022
114	658565	12.010	1022
115	658565	12.010	1020
116	658565	12.010	1022
117	658565	12.010	1016
118	658565	12.010	1020
119	658565	12.010	1018
120	658565	10.740	908
121	658565	10.540	892
122	658565	12.010	1018
123	658565	9.220	782

(Z01)

Statement of compliance

The products have been tested in accordance with the purchase specification and are found to be satisfactory.

Alteration of this testimonial and certification or use for other products is not allowed and are regarded as falsification of documents and will be subjected to criminal jurisdiction.

INSPECTION REPRESENTATIVE



Dr. Löbbe