

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 4244Sv07 Page: 1 / 5 Date: 26.03.2007
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(A01) V&M FRANCE	(A08.1) V&M-Order-No. BK0128 (A08.2) Suborder
(A06.1) Customer BABCOCK & WILCOX CO INC BABCOCK & WILCOX CO INC 44203 BARBERTON (OHIO) 44203-P.O. BOX 351	(A07.1) Order-No. 43-044654
(A06.2) Orderer /	(A07.2) Order-No. 43-044654 Date 17.07.2006
(A06.3) Client's Client BABCOCK & WILCOX CO INC	(A07.3) Order-No. BAX062314 / Contract 354-0153
(B01, B02, B04) Description of the product	Hot finished seamless steel tubes Ends plain, square to tube axis Inside without rust protection - Outside dry varnish ASME SA 213, Edition 2004 ASME SA 450, Edition 2004 ASME Boiler and Pressure Vessel Code, Sect. II, Part. A, Edition 2004, Addenda 2005 Spec. C030000, HF=CF + D031247 V&M comments PTV/F/98001, Rev. 2, dated 07-03-02 Grade T91
MERCHANDISE IS FREE OF MERCURY CONTAMINATION AND NO WELD REPAIR WAS PERFORMED	

(A13) V&M Item	(A09) Cust. Item	(B14) Item text	(B09) Dimensions	(B10) Single length
20		Item 122 Ref. No COA AS7700 Part No 6262289	OD 2 in x Min. WT 0.165 in	Fixed length 48 Ft + 0.55 in - 0 in

(A13) V&M Item	(A09) Cust. Item	(B07.1) Heat	(B08) Quantity	(B11) Total length m	(B13) Weight kg
20		42079 43716	235 22 257	3.438,05 321,86 3.759,91	18.235 1.706 19.941

(C71)
HEAT CHEMICAL ANALYSIS

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 4244Sv07 Page: 2 / 5 Date: 26.03.2007
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(C71)

HEAT CHEMICAL ANALYSIS

(B07.1) Heat	(B15) Process	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Al %	Nb/Cb %
min	-	0,07	0,20	0,30	-	-	8,0	0,85	-	-	0,06
max	-	0,14	0,50	0,60	0,020	0,010	9,5	1,05	0,40	0,04	0,10
42079	Electric (EAF)	0,11	0,33	0,51	0,017	0,002	8,6	0,95	0,18	0,01	0,07
43716	Electric (EAF)	0,10	0,30	0,45	0,015	0,003	8,3	0,96	0,14	0,01	0,07

(B07.1) Heat	V %	N %	2432 -								
min	0,18	0,030	2,000								
max	0,25	0,070	-								
42079	0,22	0,045	4,064								
43716	0,23	0,044	3,346								

2432	N/AL
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Heats fully killed

(C72)

PRODUCT CHEMICAL ANALYSIS



(B07.1) Heat	(C00.1) Test Piece	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Al %	Nb/Cb %
min		0,07	0,20	0,30	-	-	8,0	0,85	-	-	0,06
max		0,14	0,50	0,60	0,020	0,010	9,5	1,05	0,40	0,04	0,10
42079	01KM568	0,09	0,32	0,49	0,013	0,001	8,6	0,91	0,17	0,01	0,06
43716	01LD189	0,09	0,29	0,46	0,018	0,003	8,2	0,95	0,13	0,01	0,07

(B07.1) Heat	(C00.1) Test Piece	V %	N %	2432 -							
min		0,18	0,030	2,000							
max		0,25	0,070	-							
42079	01KM568	0,21	0,046	4,182							
43716	01LD189	0,23	0,044	3,667							

2432	N/AL
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(B04)

HEAT TREATMENT

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 4244Sv07 Page: 3 / 5 Date: 26.03.2007
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(B04)

HEAT TREATMENT

Heat treatment type	Temperature	Soaking time	Cooling
Normalising	1060 °C	20 min	Air
Tempering	780 °C	40 min	Air

TENSILE TEST RESULTS



Type (C10.1)	Tube strip specimen
Test temperature (C03)	Room temperature
Direction (C02)	longitudinal

(B07.1) Heat	(C00.1) Test Piece	(C10.2) Dimension	(C11) YS	(C12) TS	(C13.2) Elong.						
		mm / mm2	R _{p0,2} MPa	R _m MPa	2" %						
min		-	415	586	15						
max		-	-	-	-						
42079	01KM568	18,40x4,70 88,98	517	684	21						
42079	02KM568	18,30x4,80 90,37	517	691	22						
43716	01LD189	18,70x4,50 86,65	488	680	22						
43716	02LD189	18,80x4,90 94,95	483	658	22						

(C10.2)	Dimension	Test piece dimensions
		Test piece area

HARDNESS TEST RESULTS

Method of test (C30)	Brinell
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HARDNESS TEST RESULTS

(B07.1) Heat	(C00.1) Test Piece	(C31.1) HB	(C31.1) HB	(C31.1) HB	(C32.1) Mean						
min		-	-	-	-						
max		250,0	250,0	250,0	-						
42079	01KM568	202,0	202,0	207,0	203,7						
42079	02KM568	207,0	207,0	202,0	205,3						
43716	01LD189	195,0	195,0	197,0	195,7						
43716	02LD189	187,0	187,0	187,0	187,0						

(C50)

TECHNOLOGICAL AND OTHER TESTS ON SPECIMENS

Test	Conditions	Test rate	Result
Drift expanding test / Flaring test			Satisfactory
Flattening test			Satisfactory

(D54)

OTHER TESTS ON PIPE

Test	Conditions	Test rate	Result
UT longitudinal	ASTM E213 S1 + SA450 LONG	100% each lot	Satisfactory
Appearance & Dimensions		100% each lot	Satisfactory
Eddy Current test	E309 + NORME	100% each lot	Satisfactory
Positive Material Identification		100% each lot	Satisfactory



(A04, B06)

MARKING, IDENTIFICATION

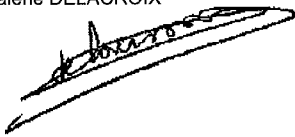


Paint stenciled on one side	 V & M FRANCE A/SA213 T91 HF US HT HEAT NUMBER 50.80 X 4.19 LENGTH 43-044654 BAX062314 / CONTRACT 354-0153 ITEM 122 REF. NO COA AS7700 PART NO 6262289
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(Z01)

The supplied products are in compliance with the requirements of the order

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(A05, Z02, Z03)

Date	26.03.2007
Validated by	Inspection Representative
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