

V&M FRANCE (A01) TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - (A02) INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 4276Sv07 (A03) Page: 1 / 5 Date: 26.03.2007
---	--	--

(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
7		Item 54 / 200 Ref. No COA AS4100 Part No 6262404	OD 2 in x Min. WT 0.36 in	Fixed length 37.5 Ft + 0.43 in - 0 in
8		Item 55 Ref. No COA AS4700 Part No 6262516	OD 2 in x Min. WT 0.36 in	Fixed length 398 in + 0.31 in - 0 in

(A13) V&M Item	(A09) Cust. Item	(B07.1) Heat	(B08) Quantity	(B11) Total length m	(B13) Weight kg
7		40898	23 ✓	262,89	2.662
8		38975	96 ✓	970,43	9.879

(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. : 4276Sv07 Page: 2 / 5 Date: 26.03.2007
---	--	--

(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
38975	Electric (EAF)	0,11	0,32	0,48	0,014	0,002	8,4	0,96	0,14	0,01	0,07
40898	Electric (EAF)	0,11	0,28	0,49	0,016	0,005	8,7	0,94	0,18	0,01	0,08

(B07.1) Heat	V %	N %	2432 -								
min	0,18	0,030	2,000								
max	0,25	0,070	-								
38975	0,21	0,045	3,717								
40898	0,20	0,044	3,408								

2432 N/AL

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
38975	01KL862	0,09	0,33	0,48	0,014	0,001	8,5	0,93	0,15	0,01	0,06
40898	01KL861	0,09	0,27	0,49	0,015	0,004	8,8	0,92	0,17	0,01	0,08

(B07.1) Heat	(C00.1) Test Piece	V %	N %	2432 -							
min		0,18	0,030	2,000							
max		0,25	0,070	-							
38975	01KL862	0,20	0,045	3,214							
40898	01KL861	0,20	0,045	3,750							

2432 N/AL

(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. : 4276Sv07 Page: 3 / 5 Date: 26.03.2007
---	--	--

(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	20						
max		-	-	-	-						
38975	01KL862	19,90x9,90 206,50	492	684	29						
38975	02KL862	20,00x9,70 204,39	508	690	27						
40898	01KL861	19,90x10,10 210,83	557	723	28						
40898	02KL861	19,90x10,30 216,25	499	709	27						

(C10.2)

Dimension	Test piece dimensions
	Test piece area

HARDNESS TEST RESULTS

Method of test (C30)	Brinell
----------------------	---------

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. : 4276Sv07 Page: 4 / 5 Date: 26.03.2007
---	--	--

HARDNESS TEST RESULTS

(B07.1) Heat	(C00.1) Test Piece	(C31.1) HB										
min		-										
max		250,0										
38975	01KL862	197,0										
38975	02KL862	198,0										
40898	01KL861	209,0										
40898	02KL861	202,0										

(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

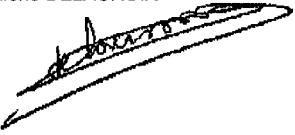
Paint stenciled on one side	 VALLOUREC & MANNESMANN FRANCE A/SA213 T91 HF US HT HEAT NUMBER 50.80 X 9.14 LENGTH 43-044654 BAX062314 / CONTRACT 354-015 3 ITEM 54 REF. NO COA AS4100 PART NO 6262404
-----------------------------	---

(Z01)

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

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. : 4276Sv07 Page: 5 / 5 Date: 26.03.2007
---	--	--

(A05, Z02, Z03)

Date	26.03.2007
Validated by	Inspection Representative
	Valérie DELACROIX 
☎	+ (33) 3 27 23 14 56
☎	+ (33) 3 27 23 15 25
@	valerie.delacroix@vmtubes.fr
Stamp	

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution.