



ROTH Mions SAS  
43, rue des Brosses  
69780 Mions - France  
Tél 04 72 28 15 60  
Fax 04 78 21 16 26

## Déclaration UE de conformité (Directive 2014/68/UE) EU Declaration of conformity (2014/68/EU Directive)

Le fabricant ROTH Mions SAS, soussigné, certifie, sous sa seule responsabilité, que les équipements mentionnés ci-dessous satisfont aux exigences de la directive 2014/68/UE. Les équipements et composants mentionnés ci-dessous ont été fabriqués en accord avec les spécifications techniques cités ci-dessous, et l'évaluation de conformité à la directive a été établie par Bureau Veritas S.A., Newtime, 52 boulevard du Parc, Ile de la Jatte, 92200 Neuilly sur Seine, France, organisme notifié n° 0062.

*The undersigned ROTH Mions SAS manufacturer certifies under its own responsibility, that the equipments specified below satisfy the requirements of the 2014/68/EU directive. The equipments and components specified below have been manufactured in accordance with the technical specifications described below and the conformity assessment to the directive has been established by Bureau Veritas S.A., Newtime, 52 boulevard du Parc, Ile de la Jatte, 92200 Neuilly sur Seine, France, notified body n° 0062.*

### **Equipement / Equipment** : Récipient sous pression / Pressure vessel

Capacité / capacity : 50 L  
Référence / reference : 50 L G 360 bar  
Nature du fluide / type of fluid : Groupe 1 (art.2 Reg n°1272/2008)  
Tube utilisé / used tube : 219,1 x 8,35 mm mini  
N° plan / drawing N° : RT551 - 810240  
Pression de service / service pressure : 360 bar  
Pression d'épreuve / test pressure : 515 bar  
Température de service / service temperature : -40/+80°C  
Matière / material : 34CrMo4-SPEC014  
Nbre cycles à  $\Delta P_{max}$  / cycles number at  $\Delta P_{max}$  : 4093  
Calcul basé sur norme / Calculation based on standard : AD2000-Merkblatt B0, B1, B3, B9, B10, S1  
Normes harmonisées applicables / Applicable harmonized standard : Néant / none  
Autre directive applicable / other applicable directive : Néant / none.

Module D "Assurance Qualité Production" / "Production Quality Assurance" : CE-0062-PED-D-RTM-001-15-FRA-revC

Module B "Examen CE/UE de type" / EC/EU type examination : CE-PED-B-RTM 007-13-FRA rev.C type : A010.800/AD/CrMo

Qté / Qty : 50 pièces / parts						
N° série Serial N°		N° coulée matière Material heat N°		Repère coulée Material heat code	Fabricant tube Tube manufacturer	N° lot Batch N°
28643	to	28652	320557	DZ	Vallourec - Rath-Stopfen	SA301
28653	to	28692	373255	HD	Vallourec - Rath-Stopfen	TA229
	to					
	to					

Contrôle réception matière / control of material at reception : Conforme / conform  
Traitement thermique réalisé / accomplished heat treatment : Conforme / conform  
Résultats d'essais mécaniques / mechanical tests results : Conforme / conform  
Test hydrostatique réalisé / accomplished hydrostatic test : 100% Conforme / conform  
Contrôle marquage / control of marking : Conforme / conform  
Contrôle visuel / visual control : Conforme / conform  
Contrôle dimensionnel / dimensionnal control : Conforme / conform

Date d'épreuve / hydrostatic test date : 18/09/2017

**Les équipements sont déclarés CONFORMES / Equipments are declared CONFORM.**

Signature au nom du fabricant / signed on behalf of the manufacturer :

Nom / name : N. Bailly  
Resp. Technique & Qualité / Technical & Quality Resp.  
Date / date : 19/09/2017

fait à Mions / signed at Mions

Dimensions principales / Main dimensionnal characteristics	
Diamètre extérieur / Outside Diameter	219,1 mm
Epaisseur mini partie cylindrique / Mini Thickness at cylindrical part	8,35 mm
Longueur hors tout / Maxi length	1825 mm
Ouverture 1 : diam maxi x épaisseur / Opening 1 : diam maxi x thickness	26,725 x 13,5 mm
Ouverture 2 : diam maxi x épaisseur / Opening 2 : diam maxi x thickness	26,725 x 13,5 mm

**Be careful, this shell is a pressure vessel. Failure to follow instructions may result a danger for the security of people and goods.**

To preserve the quality of your product from delivery and throughout its use in the best conditions of security, it is recommended that you read this manual carefully and strictly follow the instructions it contains.

### 1. Description

#### Use :

The vessel function is to store pressurized fluids.

The vessel itself cannot store fluid under pressure. It has to be equipped with suitable pieces defined by the manufacturer of those pieces.

The vessel can store different fluids, depending of its application :

- Hydraulic oil and Nitrogen for bladder accumulator (fluids of group 2).
- Hydrogen. Hydrogen gives fragility to the steel. (fluid of group 1).  
Declaration of conformity mentions "Hydrogen" and marking indicates "H2".
- Compressed air for diving bottle for example, Water (fluids of group 2).
- Compressed oxygen. Combustion fluid. (fluid of group 1).
- For the other applications or particular fluids, ROTH has to be informed by the fitter, before filling the vessel.

The vessel cannot store corrosive fluids.

The vessel is not defined for Transportation of Fluids.

#### Regulation :

The vessel is conforming to European Directive 2014/68/UE concerning Equipments under pressure.

It is a vessel homologated under Category IV. Therefore, the vessel is approved following conformity evaluation procedure module B+D ; this conformity evaluation procedure allows the vessel to be homologated for lower categories.

The vessel is able to store fluids of group 1 and/or group 2 as defined in the European rule CLP 1272/2008 and following above restrictions (see fluid group mentioned in UE Declaration of conformity).

#### Fabrication :

The vessel is manufactured in seamless steel, forged at each ends.

### 2. Technical feature

Some technical features are mentioned in the Conformity Declaration or may be stamped on the product (see §4).

Storing Temperature (vessel without pressure)	-60°C to +350°C
Maxi Temperature for applying coating	350°C
Weight depending on model	4 kg to 150 kg
Standard delivery conditions (except specific request) – Internal protection	Dessicant bag or oil spread inside the vessel. Cap at each end.
Standard delivery conditions (except specific request) – External protection	Primary coating or finishing paint or anticorrosive protection or without. Anticorrosive protection + finishing paint for diving bottles.
Fatigue calculation is done following recognized Code. Cycle numbers is depending on the vessel delta pressure of use (see cycles number on Declaration of Conformity). For diving bottles, cycle number is defined in Manufacturing standard.	

### 3. Instructions

Instructions shall be considered during all the life of the vessel, it means for the shell alone, for the shell equipped, before and during use, and at the end of its life.

It concerns handling, storing, installation, fixing, commissioning, use, maintenance, removal, disposal or recycling.

#### 3.1 Handling, storage, installation

##### Handling :

The vessel shall be handled with care to save it against shocks or stresses which can deform, scratch, crack or create metal wrenching.

Once installed, if necessary, protection around the vessel shall be provided.

For heavy vessel, a magnet, belt or other suitable means may be used for handling.

During transportation, the vessel shall be packed in suitable packaging : carton, container, plastic coated pieces secured on pallets... Packaging shall be done with a limited number of levels depending on the size of the vessels.

During handling, the vessel weight shall be well considered.

##### Storage :

Storage shall be made out of the weather, moisture, runoff, condensation. Storage temperature : see §2. The vessel shall be protected with same means than delivery : see §2.

##### Protection :

The vessel shall be protected against anything which may cause a corrosive action, whether inside or outside.

Depending on the conditions of use and location, the vessel can be coated with a protective paint or other coating. The compatibility of the coating and application temperature shall be checked to be in conformance with requirements of §2.

##### Installation :

During installation and before the first pressurization, the fitter shall visually check that the vessel has suffered no damage.

If the manufacturer ROTH has not stamped the group of fluid (and its possible nature if necessary) in the initial marking of the vessel, the fluid is from group 2 and non corrosive for the tube walls.

The vessel shall be equipped at ends with connecting pieces designed and manufactured in conformance with the design of the vessel.

It is recommended to fix the vessel using suitable clamps adapted to the diameter of the vessel, and suitable supports for the hemispherical part.

It is forbidden to carry out a repair by welding, drilling, riveting or any operation creating a removal of material, or a rise in temperature.

Compatibility of the fluid with steel and with possible internal and external protection elements shall be checked.

A pressure relief system on the equipment or installation shall be fitted to avoid the system pressure becomes over the maximum allowable pressure of the vessel.

The filled fluid shall not increase the internal defined pressure at temperature of use.

Regulations in force shall be followed during installation.

#### Additional recommendations :

The vessel shall not be exposed to the action of flame or sparks.

The vessel shall not be exposed to the effect of electric and magnetic fields which could create sparks or overheating.

The vessel shall be protected against the effects of lightning.

The vessel shall not be installed and used as a structural component and shall not be used to support other components or assemblies.

The vessel shall not be exposed to external loads.

### 3.2 Use

#### Temperature and pressure phenomena :

In use, an increase of temperature involves an increase of pressure ; likewise a pressure variation generates a temperature change (an increase of pressure generates an increase of temperature, and a relaxation of the pressure generates a temperature decrease). The user shall ensure these behaviors to avoid exceeding the vessel limits of use.

#### Inspection and periodical follow up :

The user is responsible of following up periodical inspections according to regulatory requirements.

In addition and depending on use, the user shall regularly check that the vessel does not show evidence of deterioration such as corrosion, deformation, shock, leak, crack...

#### Wear and fatigue phenomena :

In case of use with abrasive fluid, a filter shall be fitted on the installation.

Depending on the conditions of use, fatigue phenomena may occur.

The user shall regularly proceed to inspection of the general condition of the vessel.

### 3.3 Maintenance, dismantling, destruction, recycling

Before any maintenance or disassembly on the vessel equipped with connecting pieces, the pressure lines shall be purged, and the absence of residual pressure inside the vessel shall be ensured.

Before destruction or recycling, the pressure lines shall be purged, and the absence of residual pressure inside the vessel shall be ensured.

If necessary, the remaining gas shall be removed using a neutral gas.

3.4 For other situations, please ask to ROTH.

### 4. Marking

The vessel is marked with the following non-exhaustive information in a reinforced area so as not to weaken the part.

ROTH	Name or brandt symbol of the manufacturer
ZZZZZ	Name or brandt symbol of the customer, if any
AAAA	Manufacturing year
XXXX	Serial number of the vessel
PS ____ BAR	Maximum allowable working pressure, in bar
TS ____ / ____ °C	Temperature of use, in degree Celsius
V XX L	Capacity, in litre
XXXX	Use (ACCU for example)
PT ____ BAR	Test pressure, in bar
AAAA / MM	Date of test pressure, year/month
CE XXXX	CE mark followed by notified body N°
XXXX	Notified body n°
XXXX	Group (preceded by G or GROUP) or nature of the allowed fluid, if any
XXXX	Diving bottle : thread information
XXXX KG/L	Maxi filling rate, if any
CH XX KG	Filling mass, if any
XXXX KG	Mass of the vessel (with accessory), if any

The user shall not change the marking unless having ROTH authorization.

In case of additional marking (specific instructions, re-testing during inspections...), it shall be done in the reinforced hemispherical area, and it shall not be confused with the initial marking.

No writing or marking insculcation is allowed on the cylindrical area of the vessel.

The marking operation shall not cause temperature rise beyond the temperature of use.

The marking shall not generate excessive stresses on the vessel.

<b>Vallourec Deutschland GmbH</b> Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY	(A01)		INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION 3.1 EN 10204:2004	(A02)
			No. / N° : 82521RS16 Page/Page: 1 / 4 Date/Date: 26.10.2016	(A03)

(A01) <b>Vallourec Deutschland GmbH</b>	(A08 1) <b>Vallourec-Order-No. / N° de Cde Vallourec/ 233593</b>  (A08 2) <b>Suborder / Suborder 84427624</b>
(A06 1) Customer / Client <b>ROTH MIONS S.A.S.</b> 43, RUE DES BROSSES 69780 MIONS	(A07 1) Customer Order-No. / N° de Cde Client 1600369
(A06 2) <b>Orderer / Emetteur</b> /	(A07 2) <b>Orderer Order-No. / N° de Cde Emetteur 1600369</b> <b>Date / Date 19.07.2016</b>
(B01, B02, B04) <b>Description of the product</b> <b>Description du produit</b>	Hot finished seamless hollows for pressure vessels Roth, SPEC 014, Rev. v06, November 20-2012 Vallourec comments : Roth spec 014 rev 06 dated 20-11-2012-V, Rev. 5 34CrMo4 Ends plain, square to tube axis Without outside rust protection Without inside rust protection  Ebauches sans soudure finies à chaud pour bouteilles et réservoirs Roth, SPEC 014, Rev. v06, November 20-2012 Commentaires Vallourec : Roth spec 014 rev 06 dated 20-11-2012-V, Rev. 5 34CrMo4 Extrémités lisses coupées d'équerre Sans protection extérieure Sans protection intérieure
The works operate a Quality Management System according to European Pressure Equipment Directive (PED) 2014/68/EU Annex I Par. 4.3 (Certificate 07-202-1410-WP-1135/14 issued by TÜV NORD valid until July 31-2017) Les usines appliquent un Système de Management de la Qualité conforme à la Directive Européenne Equipement Sous-Pression (PED) 2014/68/EU Annexe I Chap 4.3 (Certificat 07-202-1410-WP-1135/14 délivré par TÜV NORD valable jusqu'au July 31-2017)	
(B03) AS ROLLED BRUT DE LAMINAGE	

(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. indiv.
1		ARTICLE NUMBER 77 ARTICLE NO. 77	OD 219.1 X Min. WT 8.35 mm OD Tol ± 1 % WT Tol : - 0 + 28 % Deviation from straightness max. 3 mm/m, total deviation max. 0.2 % of the tube length DE 219.1 X EP Mini 8.35 mm	Random length from 9000 to 12000 mm Short Lengths : max. 10 %, not shorter than 6000 mm Longueur courante de 9000 à 12000 mm tubes courts : max. 10 % de longueur supérieure à 6000 mm

000005-0002/00005

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004  No. / N° : 82521RS16 (A03) Page/Page: 2 / 4 Date/Date: 26.10.2016
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(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. indiv.
			Tol sur DE $\pm 1\%$ Tol sur Ep : - 0 + 28 % Flèche locale maxi 3 mm/m, flèche totale maxi 0.2 % de la longueur du tube	

(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B08) Quantity Nombre	(B11) Total length Long. totale m	(B13) Weight Poids kg
1		45	477,19	23.698

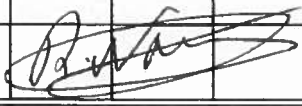
Vallourec Item Poste	Delivery Note-No Bordereau de livraison-No	Packing list-No Liste de colisage-No
1	26413	

(C71)

## HEAT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE COULEE

(B07.1) Heat Coulée	(B15) Process Procédé	Steel plant	C %	Si %	Mn %	P %	S %	Al %	Cu %	Cr %	Ni %
min	-	-	0.340	0.200	0.80	-	-	0.020	0.100	1.050	0.100
max	-	-	0.370	0.350	0.90	0.025	0.0250	0.040	0.250	1.150	0.250
320557	Oxygen (BOF)	HK	0.360	0.240	0.82	0.014	0.0020	0.035	0.100	1.080	0.110

DZ

(B07.1) Heat Coulée	Mo %	V %	Sn %	Ti %	N %	Pb %	APPROUVÉ Sce CONTROLE Date : 27 OCT. 2016 Visa : 				
min	0.200	0.020	-	0.010	-	-					
max	0.250	0.040	0.0250	0.030	0.0130	0.012					
320557	0.210	0.022	0.0020	0.020	0.0052	0.001					

Steel plant HKM HUCKINGEN

Heats fully killed  
Acier Calmé

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rath Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004
No. / N° : 82521RS16 (A03) Page/Page: 3 / 4 Date/Date: 26.10.2016		

#### IMPACT TEST / GARANTIE IMPACT

The tubes fulfil the impact requirements specified in the standard : 27J in transverse direction (40J longitudinal if transverse is not feasible) at the temperature of 20°C  
Les tubes répondent aux exigences demandées par la norme:27 J en travers (40J en long si travers pas possible) à la température de 20°C

(D55)

#### OTHER TESTS ON PIPE / AUTRES ESSAIS SUR TUBE

Test Nature d'essai	Conditions Conditions	Test rate Ampleur du contrôle	Result Résultat
HEAT TREATMENT TRAITEMENT THERMIQUE	NORMALIZED FINISH-ROLLED >850 DEGREES C/AIR LAMINAGE FINAL NORMALISANT >850 DEGRES C/AIR		
APPEARANCE AND DIMENSIONS (D01) ASPECT ET DIMENSIONS (D01)		EACH PIPE/ TUBE TOUTE TUBE	SATISFACTORY SATISFAISANT
MATERIAL IDENTIFICATION TEST ESSAI ANTI MELANGE	SPECTROGRAPHIC ANALYSIS ANALYSE SPECTRALE	EACH PIPE /TUBE TOUTE TUBE	SATISFACTORY SATISFAISANT

ELECTROMAGNETIC TESTING OUTSIDE 100%  
FOR LONGITUDINAL AND TRANSVERSE DEFECTS ACC. TO  
EN ISO 10893-3, FULL LENGTH,  
EACH PIPE/TUBE SATISFACTORY  
FLUX LEAKAGE TEST FOR LONGITUDINAL DEFECTS ACC. TO  
EN ISO 10893-3, TESTCLASS F2, FULL LENGTH,  
EACH PIPE/TUBE SATISFACTORY  
FLUX LEAKAGE TEST FOR LONGITUDINAL AND TRANSVERSE DEFECTS AC  
EN ISO 10893-3, FULL LENGTH,  
INSIDE AND OUTSIDE, EACH PIPE/TUBE SATISFACTORY  
TEST ELECTROMAGNETIQUE L'EXTÉRIEUR 100%  
DEFAUTS LONGITUDINAUX AT SELON  
TRANSVERSAUX SELON, EN ISO 10893-3,F2 CLASSE TEST,  
INTERIEUR EXTERIEUR,  
ESSAI DE FLUX DE DISPERSION POUR DEFAUTS LONGITUDINAUX SELON  
INTERIEUR F2 EXTERIEUR,  
TOUTE TUBE LA LONGUEUR SATISFAISANT  
TOUTE TUBE SATISFAISANT  
ESSAI DE FLUX DE DISPERSION POUR DEFAUTS LONGITUDINAUX AT  
TRANSVERSAUX SELON INTERIEUR EXTERIEUR,  
TOUTE TUBE LA LONGUEUR SATISFAISANT  
TOUTE TUBE SATISFAISANT

(A04, B06)



#### MARKING, IDENTIFICATION / MARQUAGE, IDENTIFICATION

000005-0000400005

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004
No. / N° : 82521RS16 (A03) Page/Page: 4 / 4 Date/Date: 26.10.2016		

(A04, B06)


**MARKING, IDENTIFICATION / MARQUAGE, IDENTIFICATION**

 <b>VALLOUREC</b>	CONTINUOUSLY PAINT STENCILED MILL REFERENCE ORDER NO. 84427624 VALLOUREC LOGO VALLOUREC VAD41 TERMS OF DELIVERY SPEC014V06 219.1 8.35 MM MWT 34CRMO4 HEAT-NO. WA 233593 VLR ITEM-NO 1 PIPE NO. (TALLY-NR.)
 <b>VALLOUREC</b>	MARQUAGE EN CONTINU (AU POCHOIR) NO DE COMMANDE USINE 84427624 VALLOUREC LOGO VALLOUREC VAD41 NORME D'EXECUTION/SPEC. SPEC014V06 219.1 8.35 MM MWT 34CRMO4 NO DE COULEE WA 233593 NO DE POSTE 1 NO DU TUBE

(Z01)

The supplied products are in compliance with the requirements of the order  
Les produits livrés sont conformes aux stipulations de la commande

(A05, Z02, Z03)

Date / Date	26.10.2016
Validated by Validé par	Inspection Representative Agent Réceptionnaire
	DOGAN 
☎	+49(0)2119603852
☎	+49(0)2119602216
@	CERTIFICATES-RS- PLUG@VALLOUREC.COM
Stamp / Cachet	

Indication in parentheses correspond to attributes according to EN 10168

Les indications entre parenthèses correspondent aux repères selon EN 10168

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.  
Ce certificat, ou cette attestation ne doit être ni modifié ni appliqué pour d'autres produits. Tous changements ou application pour d'autres produits seront considérés comme falsification de documents et fraude et seront sujet à la juridiction pénale.



**Vallourec Deutschland GmbH**

**ROTH MIONS S.A.S.**

43, RUE DES BROSSES  
69780 MIONS

Inspection Department  
Düsseldorf-Rath Plug Mill  
Murat Dogan  
Phone: +49 (0)211 960 - 3852  
Fax: +49 (0)211 960 - 2216  
E-Mail: murat.dogan@vallourec.com

Düsseldorf, 30.11.2016

**SUPPLEMENTAL CONFIRMATION**

**Customer PO Reference:** 1600369 item 1  
**Vallourec PO Reference:** 233593 (844-2762) item 1

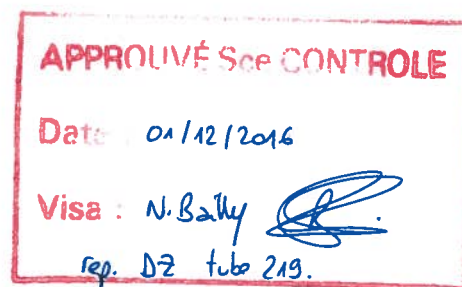
We herewith confirm that the a.m. material has been subjected to an ultrasonic pipe-body inspection in accordance with

- ISO 10893-8 inspection class U2 for lamination detection
- ISO 10893-12 for wall thickness verification

This supplemental confirmation shall be valid only in conjunction with the corresponding Inspection Certificate 3.1 issued for a.m. material and shall be used as an attachment thereto.



**i.V. Germes**  
**Inspection Representative**






# ESSAI DE TRACTION A TEMPERATURE AMBIANTE *Tensile Test at ambient temperature*

[illegible]

## ESSAI DE RESILIENCE Charpy Impact Test

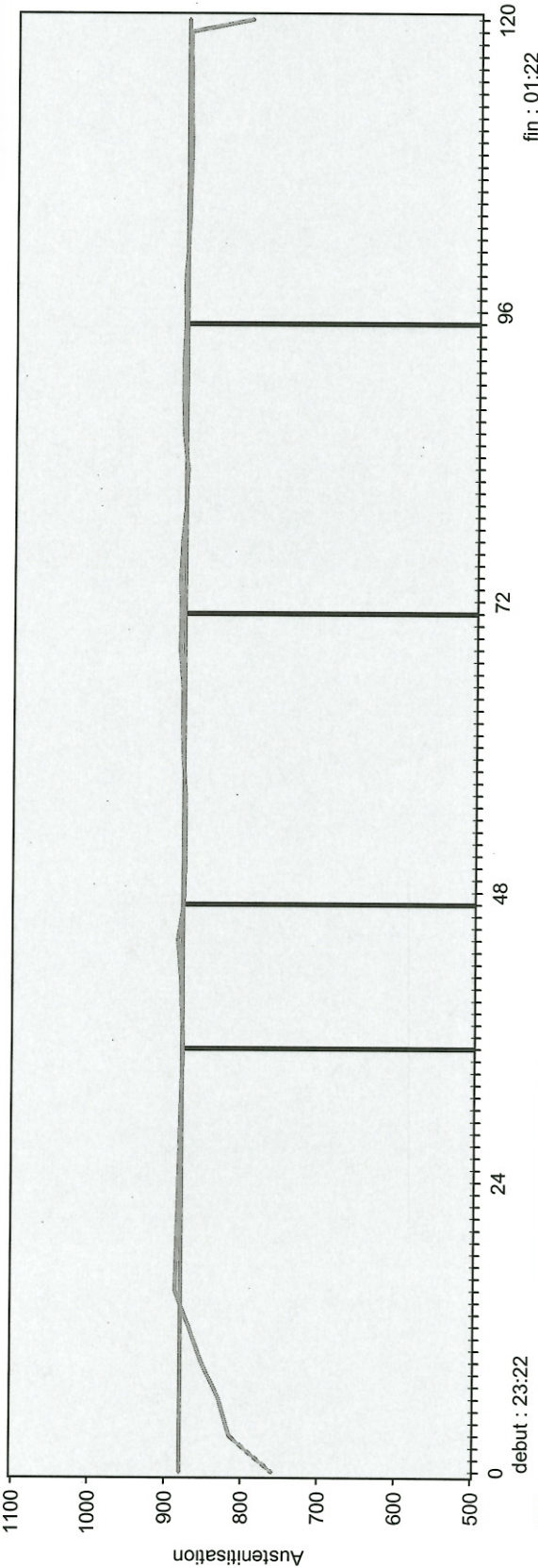
SA370 Section II Part A Code ASME - ISO 148-1:2009 - ISO148-2:2008										Prélèvement en long Longitudinal sampling			Mouton pendule E <sub>nominate</sub> 30kg.m Charpy machine Enominal 30kg.m		T° test : - 50 °C	
n°	dimensions		section	lecture measure kg.m	Kv <sub>8</sub> J/cm²		K <sub>v8</sub> mini J/cm²	Exp. Lat. mesure	Exp. Lat. mm	Pliage Bande : N Bending test :	Pliage Anneau : O Flattening test :					
	mm	x mm			mm²	indiv.						moy.				
R388	7,51	x 8	60,080	7,5	122	110	33,75									
	7,51	x 8	60,080	6,8	111											
	7,52	x 8	60,160	6	98											
CRITERES IMPOSES Criteria of acceptance															A% PED	
TTH N° : 700															A% mini : 14	
Re mini : 870															Exp. Lat. ≥ 0,4mm	
Rm : 985															Kv <sub>8</sub> mini : 33,75	
(2014/68/UE)																
Observations Remarks :																
Résultats Conforme Conformity : oui yes																
Initiales + Visa Contrôleur Operator signature : 																



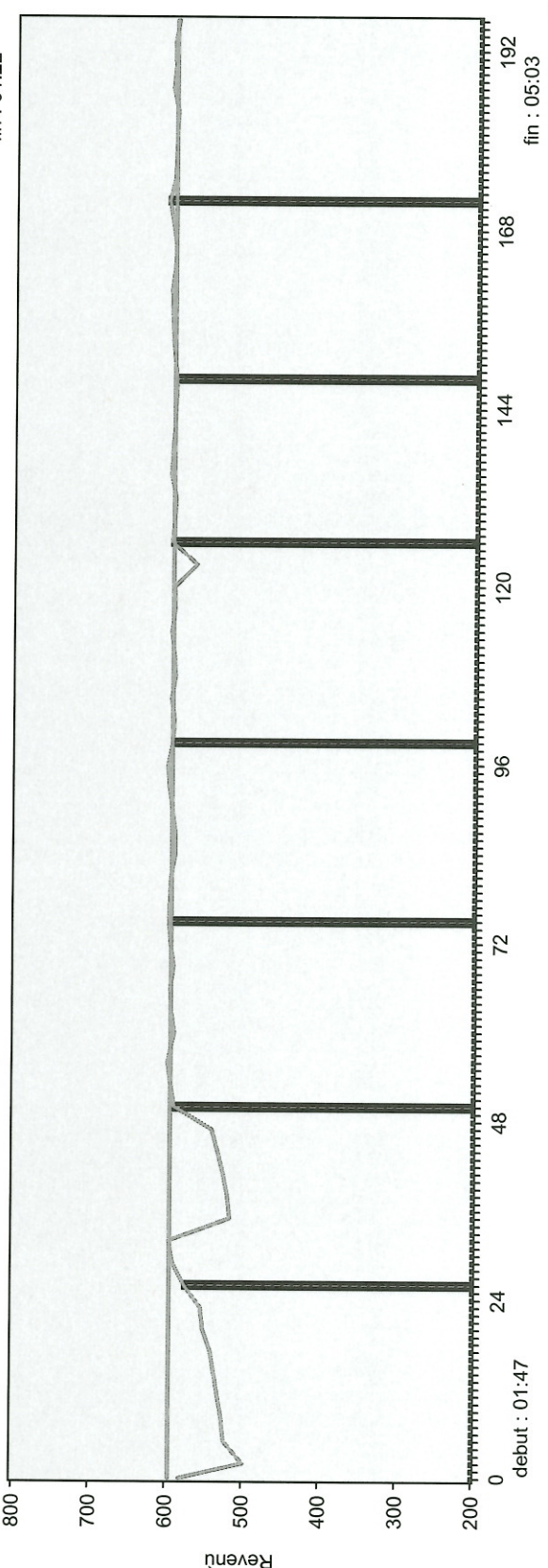
Carte de Temperatures 1612018-1

TTDV - Traitement Thermique Du Velay

Date	N. OF	Code Client	Ref piece	Nuance Acier	N. Coulee	Nbr piece plateau	Temps Immersion
07-12-2016	1612018	RT01	A50LG219.1TTH700/10	34CRMO4	DZ/A8374		785 s
Temperature Austenitisation		Transfert	Temperature Bac de Trempe		Bac	Temperature Bac de Trempe reelle	
880/1 880/2 880/3 880/4 °C		18 s	40 °C		G	40 °C	
Temperature Revenu		Gamme	Temperature Bac apres Revenu		Tr. Revenu	Temperature Bac apres Revenu reelle	
595/1 595/2 595/3 595/4 °C		TRP3 1	30 °C		0	20 °C	



	°C	min
Zone 1	759	35
Zone 2	879	12
Zone 3	879	24
Zone 4	885	24
Zone 5	882	25
Totale		120




	°C	min
Zone 1	581	26
Zone 2	576	24
Zone 3	590	25
Zone 4	598	24
Zone 5	595	27
Zone 6	597	22
Zone 7	593	24
Zone 8	604	24

**SOME CAB SAS**  
Le Suc de Chabanou  
43590 BEAUZAC  
Capital 896 000 € - RCS-85 B 80  
APE 2522B - SIREN 333 428 829  
TEL : 04 71 61 49 93  
Fax : 04 71 61 51 31  
e-mail : somecab@somecab.fr  
08/12/2016

<b>Vallourec Deutschland GmbH</b> Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY	(A01)		INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION 3.1 EN 10204:2004	(A02)
			No. / N° : 88918RS17 Page/Page: 1 / 5 Date/Date: 23.05.2017	(A03)

(A01) <b>Vallourec Deutschland GmbH</b>	(A08.1) <b>Vallourec-Order-No. / N° de Cde Vallourec/ 237543</b>  (A08.2) <b>Suborder / Suborder 84434078</b>
(A06.1) Customer / Client ROTH MIONS S.A.S. 43, RUE DES BROSSES 69780 MIONS	(A07.1) Customer Order-No. / N° de Cde Client 1600680
(A06.2) <b>Orderer / Emetteur</b> /	(A07.2) <b>Orderer Order-No. / N° de Cde Emetteur 1600680</b> <b>Date / Date 10.02.2017</b>
(B01, B02, B04) <b>Description of the product</b> <b>Description du produit</b>	Hot finished seamless hollows for pressure vessels Roth, SPEC 014, Rev. v06, November 20-2012 Vallourec comments : Roth spec 014 rev 06 dated 20-11-2012-V, Rev. 8, November 29-2016 Vallourec comments : Appendix to Vallourec technical comments on specification##Packing and loading procedure, Rev. 5 34CrMo4 Ends plain, square to tube axis Without outside rust protection Without inside rust protection  Ebauches sans soudure finies à chaud pour bouteilles et réservoirs Roth, SPEC 014, Rev. v06, November 20-2012 Commentaires Vallourec : Roth spec 014 rev 06 dated 20-11-2012-V, Rev. 8, November 29-2016 Commentaires Vallourec : Appendix to Vallourec technical comments on specification##Packing and loading procedure, Rev. 5 34CrMo4 Extrémités lisses coupées d'équerre Sans protection extérieure Sans protection intérieure
The works operate a Quality Management System according to European Pressure Equipment Directive (PED) 2014/68/EU Annex I Par. 4.3 (Certificate 07-202-1410-WP-1135/14 issued by TÜV NORD valid until July 31-2017) Les usines appliquent un Système de Management de la Qualité conforme à la Directive Européenne Equipement Sous-Pression (PED) 2014/68/EU Annexe I Chap 4.3 (Certificat 07-202-1410-WP-1135/14 délivré par TÜV NORD valable jusqu'au July 31-2017)	
(B03) AS ROLLED BRUT DE LAMINAGE	

(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. indiv.
1		ARTICLE NUMBER TUBE77 ARTICLE NO. TUBE77	OD 219.1 X Min. WT 8.35 mm OD Tol ± 1 % WT Tol : - 0 + 28 % Deviation from straightness max. 3	Random length from 9000 to 12000 mm Short Lengths : max. 10 %, not shorter than 6000 mm Longueur courante de 9000 à 12000

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rath Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004  No. / N° : 88918RS17 (A03) Page/Page: 2 / 5 Date/Date: 23.05.2017
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(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. indiv.
			mm/m, total deviation max. 0.2 % of the tube length DE 219.1 X EP Mini 8.35 mm Tol sur DE $\pm 1$ % Tol sur Ep : - 0 + 28 % Flèche locale maxi 3 mm/m, flèche totale maxi 0.2 % de la longueur du tube	mm tubes courts : max. 10 % de longueur supérieure à 6000 mm

(A13) Vallourec Item Poste	(A09) Cust. Item Poste	(B08) Quantity Nombre	(B11) Total length Long. totale m	(B13) Weight Poids kg
1		34	335,16	16.716

Vallourec Item Poste	Delivery Note-No Bordereau de livraison-No	Packing list-No Liste de colisage-No
1	34969	

(C71)

## HEAT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE COULEE

(B07.1) Heat Coulée	(B15) Process Procédé	Steel plant	C %	Si %	Mn %	P %	S %	Al %	Cu %	Cr %	Ni %
min	-	-	0.340	0.200	0.80	-	-	0.020	0.100	1.050	0.100
max	-	-	0.370	0.350	0.90	0.025	0.0250	0.040	0.250	1.150	0.250
222910	Oxygen (BOF)	HK	0.350	0.230	0.84	0.012	0.0010	0.027	0.110	1.080	0.100
373255	Oxygen (BOF)	HK	0.360	0.240	0.83	0.012	0.0040	0.035	0.100	1.090	0.110

APPROUVÉ Sce CONTROLE

Date : 24/5/2017

Visa : N. Billy


EQ  
HD

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004  No. / N° : 88918RS17 (A03) Page/Page: 3 / 5 Date/Date: 23.05.2017
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(C71)

## HEAT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE COULEE

(B07.1)												
Heat Coulée	Mo %	V %	Sn %	Ti %	N %	Pb %						
min	0.200	0.020	-	0.010	-	-						
max	0.250	0.040	0.0250	0.030	0.0130	0.012						
222910	0.200	0.023	0.0010	0.015	0.0061	0.001						
373255	0.210	0.025	0.0010	0.021	0.0053	0.001						

Steel plant	HKM, Duisburg
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Heats fully killed Acier Calmé
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## HEAT TREATMENT GUARANTEE / GARANTIE TRAITEMENT THERMIQUE

The society Vallourec warranted that the products covered by this certificate are able to fulfill the requirements of the paragraph 14 class C, after a laboratory heat treatment on samples

La société Vallourec garantit que les produits objet du présent certificat sont aptes à satisfaire les exigences du paragraphe 14 classe C, après un traitement thermique en laboratoire sur éprouvettes

## IMPACT TEST / GARANTIE IMPACT

The tubes fulfil the impact requirements specified in the standard : 27J in transverse direction (40J longitudinal if transverse is not feasible) at the temperature of 20°C

Les tubes répondent aux exigences demandées par la norme:27 J en travers (40J en long si travers pas possible) à la température de 20°C

(D55)

## OTHER TESTS ON PIPE / AUTRES ESSAIS SUR TUBE

Test Nature d'essai	Conditions Conditions	Test rate Ampleur du contrôle	Result Résultat
HEAT TREATMENT TRAITEMENT THERMIQUE	NORMALIZED FINISH-ROLLED >850 DEGREES C/AIR LAMINAGE FINAL NORMALISANT >850 DEGRES C/AIR		
APPEARANCE AND DIMENSIONS (D01) ASPECT ET DIMENSIONS (D01)		EACH PIPE/ TUBE TOUTE TUBE	SATISFACTORY SATISFAISANT

THE TUBES FULFIL THE IMPACT REQUIREMENTS SPECIFIED IN THIS STANDARD:

MINIMUM 27 J TRANSVERSE DIRECTION RESPECTIVELY 40 J LONGITUDINAL DIRECTION AT 20 DEGREES C TEST TEMPERATURE.

FLUX LEAKAGE TEST FOR LONGITUDINAL AND TRANSVERSE DEFECTS

<b>Vallourec Deutschland GmbH</b> Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY	(A01)		INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION 3.1 EN 10204:2004	(A02)
			No. / N° : 88918RS17 Page/Page: 4 / 5 Date/Date: 23.05.2017	(A03)



(D55)

#### OTHER TESTS ON PIPE / AUTRES ESSAIS SUR TUBE

ACC. TO EN ISO 10893-3, TESTCLASS: F3 INSIDE 10%, F2  
OUTSIDE 5%, EACH PIPE/TUBE SATISFACTORY  
US-TESTING WALL THICKNESS ACC TO ISO 10893-12 FULL LENGTH  
EACH PIPE/ TUBE SATISFACTORY  
ULTRASONIC TESTING FOR LAMINATIONS ACC. TO  
ISO 10893-8 ACCEPTANCE CLAUSE U2,  
FULL LENGTH, EACH TUBE/PIPE: SATISFACTORY  
SANS PROTECTION DE SURFACE INTER - EXTER  
"LES TUBES REpondent AUX EXIGENCES DE RESILIENCE  
A 20 DEGRE C :  
27 J MINI EN SENS TRAVERS, 40 J MINI EN SENS LONG"  
ESSAI DE FLUX DE DISPERSION POUR DEFAUTS  
LONGITUDINAUX ET TRANSVERSAUX SELON EN ISO 10893-3,  
TESTCLASS: F3 INTERIEUR 10%, F2 EXTERIEUR 5%, TOUTE TUBE  
SATISFAISANT  
CONTROLE ULTRASONORE ISO 10893-12 DE L'EPaisseur DE PAPROI  
TOUTE TUBE SATISFAISANT  
DéTECTION DE LAMINATION US TO ISO 10893-8  
ZULAESSIGKEITSKLASSE U2  
LONGUEUR ENTIER: SATISFICANTE

(A04, B06)

#### MARKING, IDENTIFICATION / MARQUAGE, IDENTIFICATION

 <b>VALLOUREC</b>	CONTINUOUSLY PAINT STENCILED VALLOUREC LOGO VALLOUREC VAD41 TERMS OF DELIVERY SPEC014V06 219.1 8.35 MM MWT 34CRMO4 HEAT-NO. PIPE NO. (TALLY-NR.) WA 237543 VLR ITEM-NO 1 MILL REFERENCE ORDER NO. 84434078 FRONT FACE BOTH SIDES (ONE COLOUR PER HEAT)
 <b>VALLOUREC</b>	MARQUAGE EN CONTINU (AU POCHOIR) VALLOUREC LOGO VALLOUREC VAD41 NORME D'EXECUTION/SPEC. SPEC014V06 219.1 8.35 MM MWT 34CRMO4 NO DE COULEE NO DU TUBE WA 237543 NO DE POSTE 1 NO DE COMMANDE USINE 84434078 PEINTURE SUR LA TRANCHE AUX 2 EXTREMITES 1 COULEUR PAR COULEE

(Z01)

The supplied products are in compliance with the requirements of the order  
Les produits livrés sont conformes aux stipulations de la commande

<b>Vallourec Deutschland GmbH</b> (A01) Werk Rath-Stopfen Rather Kreuzweg 106 40472 DÜSSELDORF GERMANY		INSPECTION CERTIFICATE (A02) CERTIFICAT DE RECEPTION 3.1 EN 10204:2004
No. / N° : 88918RS17 (A03) Page/Page: 5 / 5 Date/Date: 23.05.2017		

(A05, Z02, Z03)

Date / Date	23.05.2017
Validated by	Inspection Representative
Validé par	Agent Réceptionnaire
	DOGAN 
	+49(0)2119603852
	+49(0)2119602216
@	CERTIFICATES-RS- PLUG@VALLOUREC.COM
Stamp / Cachet	

Indication in parentheses correspond to attributes according to EN 10168

Les indications entre parenthèses correspondent aux repères selon EN 10168

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.

Ce certificat, ou cette attestation ne doit être ni modifié ni appliqué pour d'autres produits. Tous changements ou application pour d'autres produits seront considérés comme falsification de documents et fraude et seront sujet à la juridiction pénale.



# ESSAI DE TRACTION A TEMPERATURE AMBIANTE Tensile Test at ambient temperature

**Eprouvette proportionnelle cylindrique**  
*Cylindrical proportional sampling*

## ESSAI DE RESILIENCE Charpy Impact Test

**Mouton pendule  $E_{\text{nominale}}$  30kg.m**  
**Charpy machine  $E_{\text{nominal}}$  30kg.m**

**CRITERES IMPOSES Criteria of acceptance**

TTH N° : 700
A% mini :
14

[illegible]Re mini : 870  
Exp. Lat.  $\geq 0,5\text{mm}$  (Eval. DIV.2)

Rm : 985	-	Kv <sub>8</sub> mini : 33,75	(2014/68/UE)
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Observations Remarks :

Résultats Conforme Conformity :

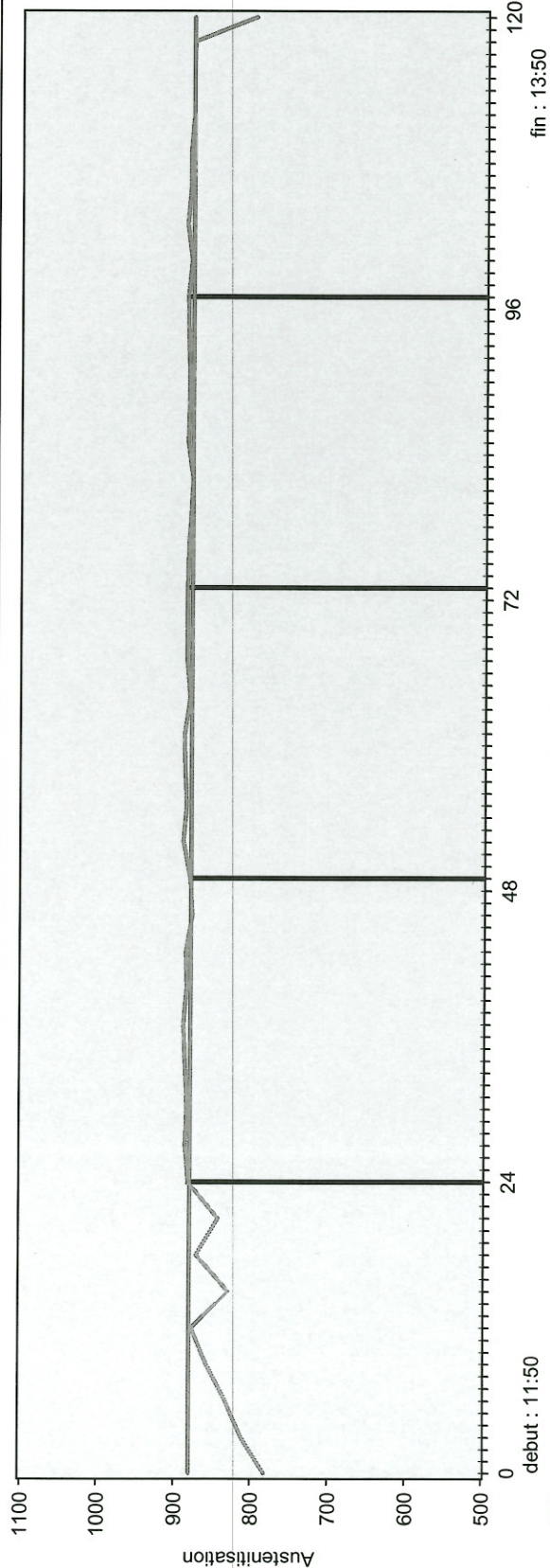
Mr. J. Edgar Hoover, Director, Federal Bureau of Investigation, Washington, D. C.



# Carte de Temperatures 1709023-1

## TTDV - Traitement Thermique Du Velay

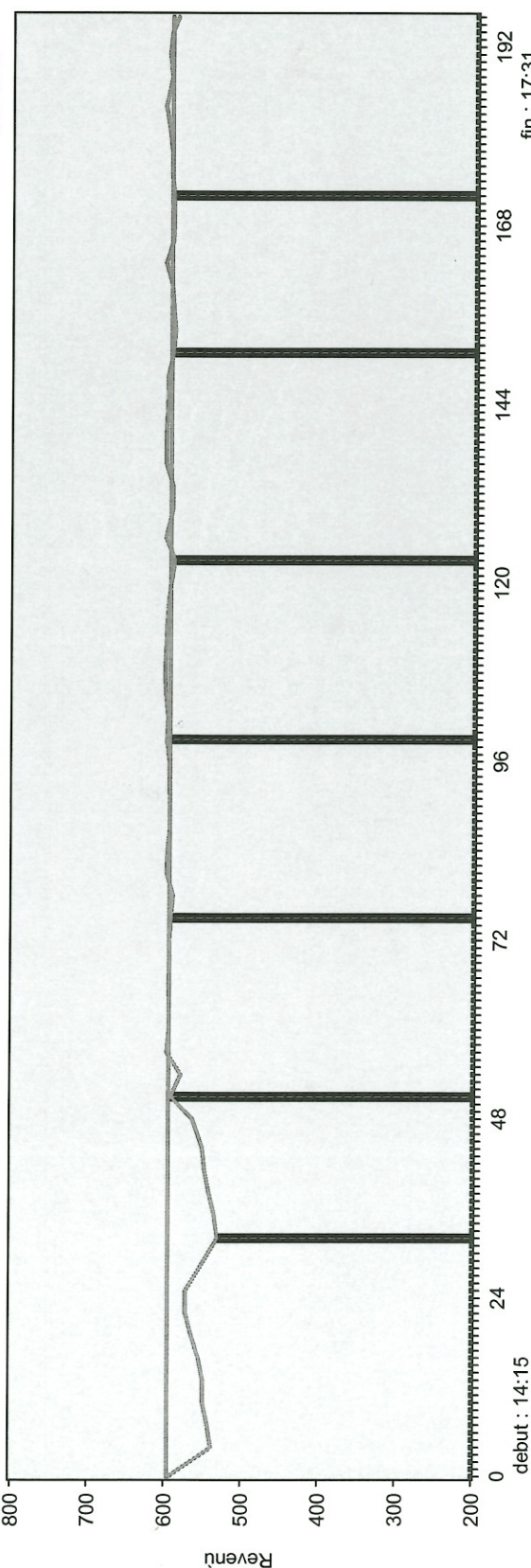
Date 07-09-2017	N. OF 1709023	Code Client RT01	Ref piece A50LG219.1TTH700/10	Nuance Acier 34CRMO4	N. Coulee HD/A8633	Nbr piece plateau 785 s	Temps Immersion 785 s
Temperature Austenitisation 880/1 880/2 880/3 880/4 °C	Transfert 18 s	Temperature Bac de Trempe 40 °C	Temperature Bac apres Revenu 30 °C	Bac G	Tr. Revenu 0	Temperature Bac de Trempe reelle 25 °C	
Temperature Revenu 595/1 595/2 595/3 595/4 °C	Gamme TRP3 1					Temperature Bac apres Revenu reelle 19 °C	



Zone	°C	min
Zone 1	782	24
Zone 2	882	25
Zone 3	881	24
Zone 4	886	24
Zone 5	887	23

Totale 120

TA 229



Zone	°C	min
Zone 1	593	32
Zone 2	531	19
Zone 3	592	24
Zone 4	593	24
Zone 5	599	24
Zone 6	590	28
Zone 7	593	21
Zone 8	593	24

SOMECAB SAS

Totale Le Sud de France 196

43590 PLEZAC

Capital 896 000 € - RCS 85 B 80

APE 2592B - SIREN 333 428 820

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08/09/17