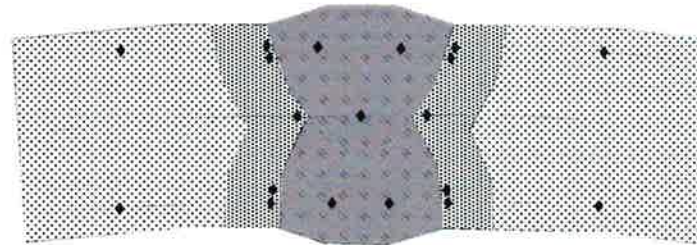
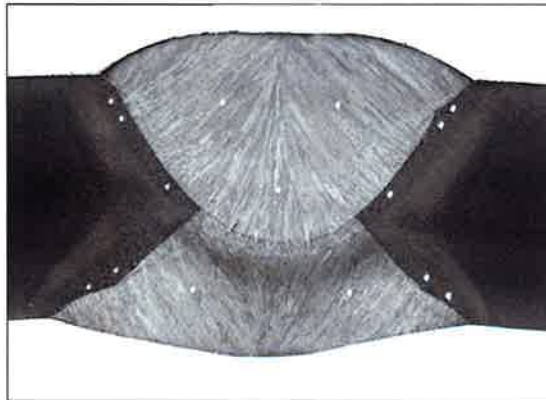


Z02
A05

JD FIELDS



LINE 1 (1.5mm FROM O/D)

LINE 2 (CENTRELINE)

LINE 3 (1.5mm FROM I/D)

PIPE NUMBER:.... DRZ00864
CAST NUMBER:.... 458764
GAUGE:..... 914 x 12.7mm

SAMPLE TESTED ON MACHINE No. : ... 140362
RESULTS VERIFIED BY : C HERBERT
DATE OF SURVEY : 21/06/2018



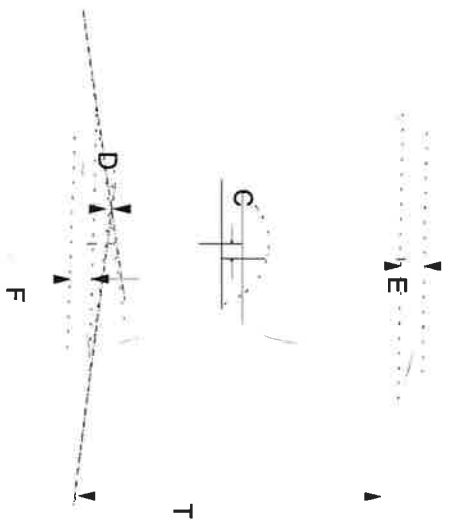
	BODY		HAZ		WELD		HAZ		BODY	
LINE 1	197		200	218	222	204				193
			208			207				
LINE 2			210	217		207				
			222			219				
LINE 3	192		212	217	204	215				192

HARDNESS RESULTS Hv10

	BODY	HAZ	WELD
MINIMUM HARDNESS (ACTUAL)	192	200	204
MAXIMUM HARDNESS (ACTUAL)	197	222	222
MEAN HARDNESS (ACTUAL)	194	210	216
SPECIFIED MAXIMUM	250	250	250

British Steel Ltd
Testing Solutions Teesside

JD FIELDS
MACROSCOPIC EXAMINATION OF WELD



PIPE NUMBER	CAST NUMBER	TESTED BY	DATE TESTED
DRZ00864	458764	C HERBERT	21/06/2018

FEATURE	SPECIFICATION REQUIREMENTS
C = WELD MISALIGNMENT	3mm MAX
D = RADIAL OFFSET OF PLATE EDGES	1.5mm MAX
E = WELD RE-INFORCEMENT (O/D)	3.5mm MAX
F = WELD RE-INFORCEMENT (I/D)	3.5mm MAX
T = NOMINAL PIPE WALL THICKNESS	12.7mm

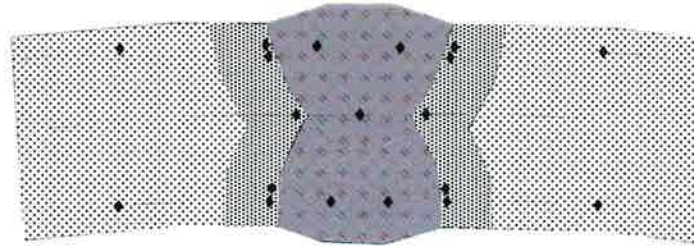
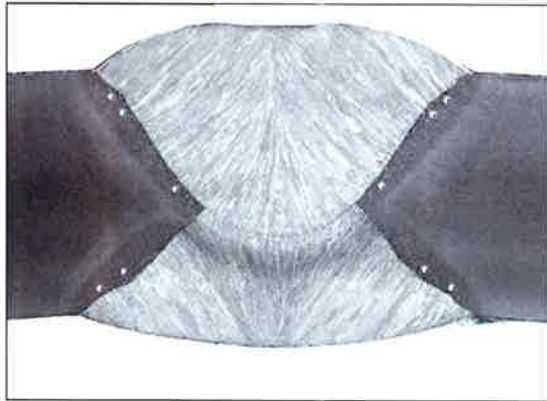
C	D	E	F
0.2 mm	0.2 mm	2.4 mm	1.9 mm



This document has been prepared by a computer system and is valid without signature.

Z02
A05

JD FIELDS



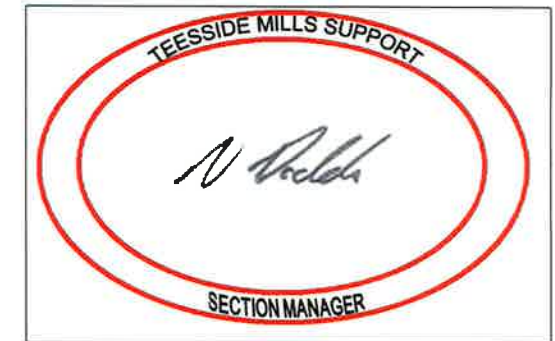
LINE 1 (1.5mm FROM O/D)

LINE 2 (CENTRELINE)

LINE 3 (1.5mm FROM I/D)

PIPE NUMBER:.... DRZ00933
CAST NUMBER:.... 458765
GAUGE:..... 914 x 12.7mm

SAMPLE TESTED ON MACHINE No : ... 140362
RESULTS VERIFIED BY : C HERBERT
DATE OF SURVEY : 21/06/2018



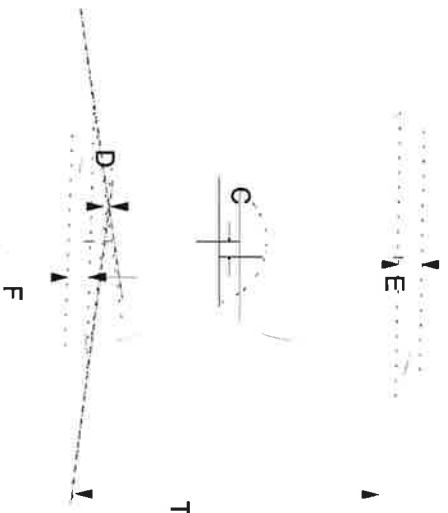
	BODY	HAZ	WELD	HAZ	BODY
LINE 1	205	209	222 223	204	206
		208		214	
LINE 2		213	219	207	
		209		225	
LINE 3	197	210	217 216	217	197

HARDNESS RESULTS Hv10

	BODY	HAZ	WELD
MINIMUM HARDNESS (ACTUAL)	197	204	216
MAXIMUM HARDNESS (ACTUAL)	206	225	223
MEAN HARDNESS (ACTUAL)	201	212	219
SPECIFIED MAXIMUM	250	250	250

British Steel Ltd
Testing Solutions Teesside

JD FIELDS
MACROSCOPIC EXAMINATION OF WELD



PIPE NUMBER	CAST NUMBER	TESTED BY	DATE TESTED
DRZ00933	458765	C HERBERT	21/06/2018

FEATURE	SPECIFICATION REQUIREMENTS
C = WELD MISALIGNMENT	3mm MAX
D = RADIAL OFFSET OF PLATE EDGES	1.5mm MAX
E = WELD RE-INFORCEMENT (O/D)	3.5mm MAX
F = WELD RE-INFORCEMENT (I/D)	3.5mm MAX
T = NOMINAL PIPE WALL THICKNESS	12.7mm

C	D	E	F
0.2 mm	0.0 mm	2.5 mm	1.6 mm



Z02
A05

Hartlepool 42" Mill
Brenda Road
Hartlepool UK TS25 2EF

Telephone: +44 (0)1429 266611
Fax: +44 (0)1429 527344

INSPECTION CERTIFICATE

EN10204 Type 3.1

Date	06/07/18	Z02
Cert No.	340/1827/0024	A03
Del. Note		

Page No. 2 of 2

Customer	A06
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TATA INT. METALS AMERICAS
475 NORTH MARTINGALE ROAD
SUITE 400
SCHAUMBURG
ILLINOIS
60173-2222
U.S.A.

Liberty Pipes Ref.No.	Sales	LPH 180032	Works	50008/ 15	A08
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Customer Order No.	Customer Reference	A07
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PUR1002247.V3 JD FIELDS (PO NO. STK-64337)

Product Description and Dimensions	B01-B04 B09-B12
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SUBMERGED ARC LONGITUDINALLY WELDED STEEL LINEPIPE UOE MANUFACTURED FROM TMC R PLATE TO API 5L 45TH EDITION 2013 GRADE X70M PSL2. HARDNESS TO MEET NACE MR0175.

36.00ins O.D x 0.500ins W.T

B06/A10

B=Body W=Weld L=Longitudinal T=Transverse S=Stripped Out Section C=Round Bar KV=Charpy Impact CL=Centre Line FL=Fusion Line F2=F/Line+2mm F5=F/Line+5mm O=Outside I=Inside
M=Mid-Thickness R=Root E=Absorbed Energy F=Fibrosity HV=Hardness VPN HR=Hardness Rockwell DT=Drop Weight Tear Test A=Annealed N=Normalised NT=Normalised and Tempered SR=Stress Relieved SA=Strain Aged

[illegible]

C71-C99	Analysis %	C	SI	MN	P	S	CR	MO	NI	AL	AS	B	CA	CO	CU	H	N	NB	TI	V	O	SN	PCM	CEV
Cast No. 458768	LADLE	.08	.34	1.69	.015	.001	.030	.004	.019	.031	n/a	.0004	.0017	n/a	.014	n/a	.0036	.045	.013	.001	n/a	n/a	.18	.37
Plate No. 9580861	PLATE	.08	.32	1.61	.013	.001	.029	.004	.019	.033	n/a	.0003	.0017	n/a	.015	n/a	.0030	.044	.012	.002	n/a	n/a	.17	.35
9580881	PLATE	.08	.32	1.61	.012	.001	.032	.006	.021	.033	n/a	.0003	.0017	n/a	.019	n/a	.0036	.043	.012	.002	n/a	n/a	.17	.36

Code Numbers in accordance with EN10168 (see overleaf).

Alteration to this document or its use for other products shall be regarded as falsification of documents and be subject to criminal jurisdiction.

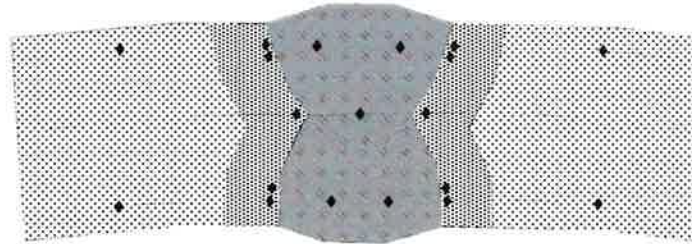
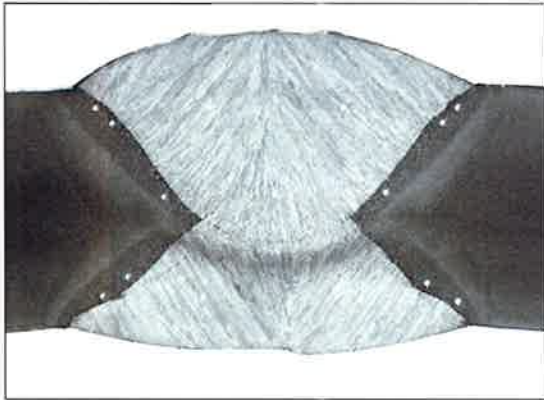
The products covered by this inspection document are certified by Liberty Pipes Limited and comply with the requirements of the Product Description.
A specific assessment for materials has been performed on the SAW Mills quality system by BV UK Ltd. Notified body No. 0041 and has been found to meet the requirements of PED (2014/68/EU).

Z01 D.Williams
Manager - SAW Mills Quality

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Z02
A05

JD FIELDS



LINE1 (1.5mm FROM O/D)

LINE 2 (CENTRELINE)

LINE 3 (1.5mm FROM I/D)

PIPE NUMBER:..... DRZ00844
CAST NUMBER:..... 458768
GAUGE:..... 914 x 12.7mm

SAMPLE TESTED ON MACHINE No : ... 140362
RESULTS VERIFIED BY : C HERBERT
DATE OF SURVEY : 21/06/2018



	BODY			HAZ			WELD			HAZ			BODY		
LINE 1	211			228	228		227	215							203
					227					221					
LINE 2				217			234	213							
					224			219							
LINE 3	205			218	231		229	217							203

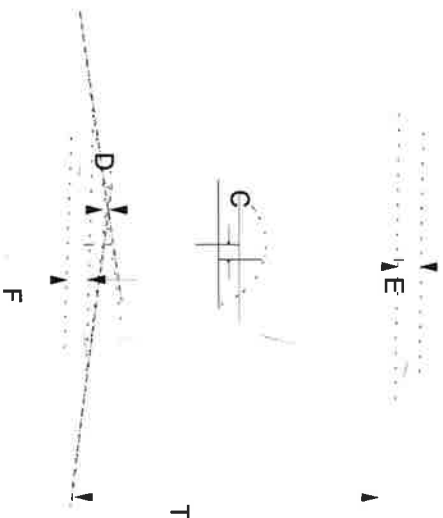
HARDNESS RESULTS Hv10

	BODY	HAZ	WELD
MINIMUM HARDNESS (ACTUAL)	203	213	227
MAXIMUM HARDNESS (ACTUAL)	211	228	234
MEAN HARDNESS (ACTUAL)	206	220	230

SPECIFIED MAXIMUM 250 250 250

British Steel Ltd
Testing Solutions Teesside

JD FIELDS MACROSCOPIC EXAMINATION OF WELD



PIPE NUMBER	CAST NUMBER	TESTED BY	DATE TESTED
DRZ00844	458768	C HERBERT	21/06/2018

FEATURE	SPECIFICATION REQUIREMENTS
C = WELD MISALIGNMENT	3mm MAX
D = RADIAL OFFSET OF PLATE EDGES	1.5mm MAX
E = WELD RE-INFORCEMENT (O/D)	3.5mm MAX
F = WELD RE-INFORCEMENT (I/D)	3.5mm MAX
T = NOMINAL PIPE WALL THICKNESS	12.7mm

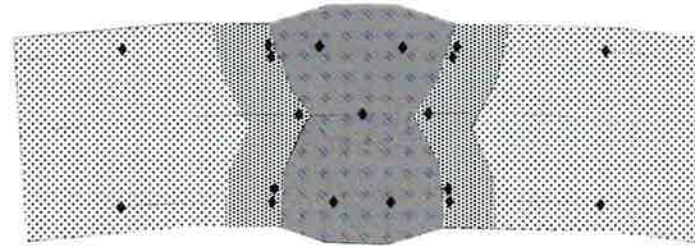
C	D	E	F
0.0 mm	0.2 mm	3.0 mm	1.5 mm



Z02
A05

Z02
A05

JD FIELDS



LINE1 (1.5mm FROM O/D)

LINE 2 (CENTRELINE)

LINE 3 (1.5mm FROM I/D)

PIPE NUMBER:.... DRZ00923
CAST NUMBER:.... 458769
GAUGE:..... 914 x 12.7mm

SAMPLE TESTED ON MACHINE No. : ... 140362
RESULTS VERIFIED BY : C DAVEY
DATE OF SURVEY : 18/06/2018



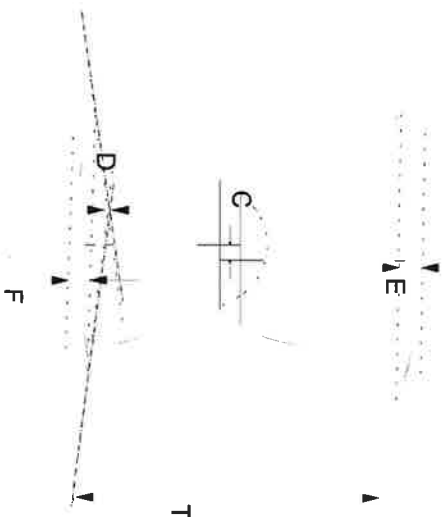
	BODY			HAZ			WELD			HAZ			BODY		
LINE 1	218			211	221		220	217				218			
				214				213							
LINE 2				215		221		219							
				229				229							
LINE 3	218			234	212		213	239					215		

HARDNESS RESULTS Hv10

	BODY	HAZ	WELD
MINIMUM HARDNESS (ACTUAL)	215	211	212
MAXIMUM HARDNESS (ACTUAL)	218	239	221
MEAN HARDNESS (ACTUAL)	217	222	217
SPECIFIED MAXIMUM	250	250	250

British Steel Ltd
Testing Solutions Teesside

JD FIELDS MACROSCOPIC EXAMINATION OF WELD



PIPE NUMBER	CAST NUMBER	TESTED BY	DATE TESTED
DRZ00923	458769	A LAWYER	18/06/2018

FEATURE	SPECIFICATION REQUIREMENTS
C = WELD MISALIGNMENT	3mm MAX
D = RADIAL OFFSET OF PLATE EDGES	1.5mm MAX
E = WELD RE-INFORCEMENT (O/D)	3.5mm MAX
F = WELD RE-INFORCEMENT (I/D)	3.5mm MAX
T = NOMINAL PIPE WALL THICKNESS	12.7mm

C	D	E	F
0.0 mm	0.1 mm	2.5 mm	1.7 mm

