



MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

4 / 6

Date: June 08, 2018

MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe		Surface: Bare			
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

FLATTENING TEST

Standard:				Standard:			
Heat N°	Lot N°	Sample N°	Result	Heat N°	Lot N°	Sample N°	Result
1178014	1178014	131393	Good	1278161	1278161	131401	Good

HYDROSTATIC TEST

Pressure		Time	Results
Unit	Value	Seconds	
psi	2,610	5	Satisfactory

SUPPLEMENTARY INFORMATION

Supplementary Information	Supplementary Information
<p>This material has been manufactured, sampled, tested and inspected in accordance with this specification and has been found to meet the requirements called for by the above order.</p> <p>This product is silicon and/or aluminum fully killed.</p> <p>NDT OK UT with ID/OD N-10 Notches verified by 1/8" FDH</p> <p>INSPECTION CERTIFICATION 3.1 IN ACCORDANCE WITH EN 10204-2004</p>	<p>COMPLIANT TO ASTM A53-12 GRADE B AND ASME SA53-13 GRADE B</p> <p>Material meets the maximum hardness requirement of section A.2.1.2 of NACE MRO 175</p> <p>BODY TENSILE SOURCED 180° FROM WELD LINE; CVN SAMPLES SOURCED 90° FROM WELD LINE; CVN SAMPLES TESTED BY 8mm STRIKER</p>

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Page:

1 / 6

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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Nominal Weight: 49.61 LB/FT	
				Quantity: 21 PCS 896 FT		44082 LB	

TENSILE TEST

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	Y.S.	U.T.S.	Elongation		
				Ls	Sc	Type	Ori	Size	.5% EUL		Req.	Lo	Min.	Obt.	
									Min: 52 200		Min: 66 700				
									Max: 76 900		Max: 110 200				
								in	F	psi	psi	in	%	%	
1178014	131393	E1	1178014	B	AM	Ss	T	1.500		RT	59 035	69 302	2.0	25.0	41.8
1278161	131401	E1	1278161	B	AM	Ss	T	1.500		RT	61 779	71 713	2.0	25.0	40.1

AM: As manufactured	Ls: Location of sample	Ori: Orientation	Ss: Strip specimen
B: Body	Max: Maximum	Req: Required	T: Transversal
E1 / E2: Ends of Sampling	Min: Minimum	RT: Room temperature	U.T.S: Ultimate tensile strength
Lo: Initial length	Obt: Obtained	Sc: Specimen condition	Y.S: Yield strength

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	U.T.S.
				Ls	Sc	Type	Ori	Size	Req.		
									Min: 66 700		
									Max: 110 200		
								in	F	psi	
1178014	131393	E1	1178014	W	AM	Ss	T	1.500	RT	74 541	
1278161	131401	E1	1278161	W	AM	Ss	T	1.500	RT	73 690	

AM: As manufactured	Min: Minimum	Sc: Specimen condition	W: Weld
E1 / E2: Ends of Sampling	Ori: Orientation	Ss: Strip specimen	
Ls: Location of sample	Req: Required	T: Transversal	

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Page:

2 / 6

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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443	Manufacturer's Works Order N°: N/A
Manufacturing Process: HFW		Product Type: Line Pipe			Surface: Bare
Standard or Specification: API 5L 45TH EDITION			Steel Grade: X52M PSL 2		Ends: Plain End Bevelled
Dimensions: 12.750 x 0.375 in	Schedule: N/A	Length: Double Random	Quantity: 21 PCS 896 FT 44082 LB		Nominal Weight: 49.61 LB/FT

TENSILE TEST

Max: Maximum

RT: Room temperature

U.T.S: Ultimate tensile strength

CHEMICAL COMPOSITION

					Composition %																		
					X1																		
					C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca	B	N	CE-Per	
					H	Max	Min																
Heat N°	Sample N°	Lot N°	Ls	P	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--	0.001	--	0.25	
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				P	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--	0.001	--	0.25	
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1178014	3956600	1178014	B.M.	H		0.04	1.07	0.006	0	0.19	0.14	0.04	0.05	0.01	0.03	0	0.032	0.004	0.011	0.002	0	0.007	0.111
1278161	3956558	1278161	B.M.	H		0.04	1.09	0.006	0	0.2	0.13	0.04	0.06	0.01	0.02	0	0.032	0.004	0.01	0.002	0	0.007	0.112
1178014	130945	1178014	B.M.	P		0.059	1.13	0.018	0.001	0.21	0.13	0.03	0.05	0.01	0.023	0.01	0.029	0.002	0.013	0.001	0.001	0.005	0.138
1178014	130946	1178014	B.M.	P		0.045	1.09	0.014	0.001	0.22	0.14	0.04	0.04	0.01	0.026	0.01	0.029	0.003	0.013	0.002	0.001	0.015	0.122
1278161	131351	1278161	B.M.	P		0.044	1.1	0.013	0	0.2	0.14	0.03	0.04	0.01	0.027	0.01	0.028	0.003	0.014	0.002	0.001	--	0.121
1278161	131352	1278161	B.M.	P		0.045	1.1	0.014	0	0.2	0.14	0.03	0.04	0.01	0.027	0.01	0.029	0.003	0.015	0.002	0.001	0.002	0.122

B.M: Base metal

H: Heat

Max: Maximum

P: Product

CE-Pcm: CE-Pcm

Ls: Location of sample

Min: Minimum

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3 / 6

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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe		Surface: Bare		Ends: Plain End Bevelled	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

THROUGH WALL HARDNESS

Required values			Individuals			Average			Hardness type:HRBW		
			Min: -	Max: 91.0	Var: --	Min: --	Max: --	Var: --			
Heat N°	Sample N°	Zone	Lot N°	Pipe N°	Specimen condition			Quad.			Avg.
						Ls	Sc				
1178014	131393	-	1178014	-	B	AM		-	HRBW		86.2
1278161	131401	-	1278161	-	B	AM		-	HRBW		85.9

AM: As manufactured

Ls: Location of sample

Quad: Quadrant

Avg: Average

Max: Maximum

Sc: Specimen condition

B: Body

Min: Minimum

Var: Variation

IMPACT TEST

Type: Charpy V			Orientation: T				Unit: ft.lb				Shear area %			
Position:			Temp: 32		Unit: F		Ind.Min,Req: 11		Req.Min.Avg: 15		Ind.Min,Req: -		Req.Min.Avg: -	
Heat N°	Sample N°	Lot N°	Ls	Sc	T.T F	Size	Results				Results			
						-	1	2	3	Avg.	1	2	3	Avg.
1178014	131393	1178014	B	AM	-22	3/4	194	199	205	199	100	100	100	100
1278161	131401	1278161	B	AM	-22	3/4	223	221	219	221	100	100	100	100

AM: As manufactured

Ind. Min. Req: Individual Minimum Required

Sc: Specimen condition

Avg: Average

Ls: Location of sample

T.T: Test temperature

B: Body

Req. Min. Avg: Required minimum average

Temp: Temperature

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5 / 6

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Customer: (Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

SUPPLEMENTARY INFORMATION

Heat Treatment	
The minimum weld seam heat treatment temperature is 1650F.	
Steel Vendor Name and Manufactured	
1278161,NUCOR STEEL HICKMAN,ARMOREL,AR,Melted and Manufactured in USA	
Steel Vendor Name and Manufactured	
1178014,NUCOR STEEL HICKMAN,ARMOREL,AR,Melted and Manufactured in USA	

SUMMARY REPORT

Heat N°	Quantity	Length	Weight	Heat N°	Quantity	Length	Weight
	(Pieces)	FT	LB		(Pieces)	FT	LB
1178014	18	781.099	38,424.031	1278161	3	115	5,658.005

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100039617.0.1

Page:

6 / 6

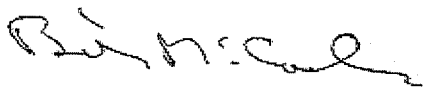

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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Barc	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

		CUSTOMER . THIRD PARTY		TENARIS QUALITY DEPARTMENT SIGNATURE	
		INSPECTION COMPANY COMPAÑIA DE INSPECCIÓN Company Name: N/A Employee Name: N/A		 QUALITY CERTIFICATION DEPT. MCCORMICK Billy	
				 CHIEF OF QUALITY CERTIFICATION DEPT. DOVER Michael	

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99464280.0.1

Page:

1 / 5

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MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer: C		Customer's Order Item: 31198405/SO/10		Customer's Reference: 621477		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 20 PCS 863 FT 42636 LB	
						Nominal Weight: 49.61 LB/FT	

TENSILE TEST

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	Y.S.	U.T.S.	Elongation		
				Ls	Sc	Type	Ori	Size	.5% EUL		Req.	Lo	Min.	Obt.	

AM: As manufactured

Ls: Location of sample

Ori: Orientation

Ss: Strip specimen

B: Body

Max: Maximum

Req: Required

T: Transversal

E1 / E2: Ends of Sampling

Min: Minimum

RT: Room temperature

U.T.S: Ultimate tensile strength

Lo: Initial length

Obt: Obtained

Sc: Specimen condition

Y.S: Yield strength

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	U.T.S.
				Ls	Sc	Type	Ori	Size			Req.
											Min: 66 700 Max: 110 200
								in	F		psi
1276750	126928	E1	1276750	W	AM	Ss	T	1.500	RT		73 934

AM: As manufactured

Min: Minimum

Sc: Specimen condition

W: Weld

E1 / E2: Ends of Sampling

Ori: Orientation

Ss: Strip specimen

Ls: Location of sample

Req: Required

T: Transversal

Max: Maximum

RT: Room temperature

U.T.S: Ultimate tensile strength

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Page:

2 / 5

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Customer:		Customer's Order Item: 31198405/SO/10		Customer's Reference: 621477		Date: December 17, 2017		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW			Product Type: Line Pipe						
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2				Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A	Length: Double Random		Quantity: 20 PCS 863 FT 42636 LB			Nominal Weight: 49.61 LB/FT	

CHEMICAL COMPOSITION

					Composition %																			
					X1																			
					C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca	B	N	CE-Pcr		
Heat N°	Sample N°	Lot N°	Ls	H	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--	--	0.001	--	0.25	
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				P	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--	--	0.001	--	0.25	
					Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
1276750	3953983	1276750	B.M.	H		0.04	1.07	0.009	0	0.19	0.12	0.04	0.05	0.01	0.03	0	0.032	0.003	0.013	0.002	0	0.008	0.11	
1276750	126463	1276750	B.M.	P		0.052	1.08	0.012	0.002	0.2	0.14	0.04	0.05	0.01	0.025	0.01	0.03	0.003	0.015	0.001	0.001	0.009	0.129	
1276750	126464	1276750	B.M.	P		0.046	1.08	0.011	0.002	0.2	0.13	0.04	0.05	0.01	0.024	0.01	0.03	0.002	0.014	0.001	0.001	0.009	0.122	

B.M: Base metal

H: Heat

Max: Maximum

P: Product

CE-Pcm: CE-Pcm

Ls: Location of sample

Min: Minimum

THROUGH WALL HARDNESS

Required values			Individuals			Average			Hardness type:HRBW		
			Min: -	Max: 91.0	Var: —	Min: —	Max: —	Var: —			
Heat N°	Sample N°	Zone	Lot N°	Pipe N°	Specimen condition		Quad.	Scale	Avg.		
					Ls	Sc					
1276750	126928	-	1276750	-	B	AM	-	HRBW	85.9		

AM: As manufactured

Ls: Location of sample

Quad: Quadrant

Avg: Average

Max: Maximum

Sc: Specimen condition

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3 / 5

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Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 20 PCS 863 FT 42636 LB	
						Nominal Weight: 49.61 LB/FT	

THROUGH WALL HARDNESS

B: Body
Min: Minimum
Var: Variation

IMPACT TEST

Type: Charpy V			Orientation: T				Unit: ft.lb				Shear area %			
Position:			Temp: 32				Unit: F				Ind.Min.Req: 11			
Heat N°	Sample N°	Lot N°	Size				Results				Ind.Min.Req: -			
			Ls	Sc	T.T	F								
1276730	126928	1276750	B	AM	-22	3/4	1	2	3	Avg.	1	2	3	Avg.
							218	212	220	217	100	100	100	100

AM: As manufactured

Ind. Min. Req: Individual Minimum Required

Sc: Specimen condition

Avg: Average

Ls: Location of sample

T.T: Test temperature

B: Body

Req. Min. Avg: Required minimum average

Temp: Temperature

FLATTENING TEST

Standard:			
Heat N°	Lot N°	Sample N°	Result
1276730	1276750	126928	Good

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4 / 5

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Customer:		Customer's Order Item: 31198405/SO/10		Customer's Reference: 621477		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API SL 45TH EDITION				Steel Grade: XS2M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 20 PCS 863 FT 42636 LB	
						Nominal Weight: 49.61 LB/FT	

HYDROSTATIC TEST

Pressure		Time	Results
Unit	Value	Seconds	
psi	2,610	5	Satisfactory

SUPPLEMENTARY INFORMATION

Supplementary Information This material has been manufactured, sampled, tested and inspected in accordance with this specification and has been found to meet the requirements called for by the above order. This product is silicon and/or aluminum fully killed. NDT OK UT with ID/OD N-10 Notches verified by 1/8" FDH INSPECTION CERTIFICATION 3.1 IN ACCORDANCE WITH EN 10204-2004	Supplementary Information COMPLIANT TO ASTM A53-12 GRADE B AND ASME SA53-13 GRADE B Material meets the maximum hardness requirement of section A.2.1.2 of NACE MRO 175 BODY TENSILE SOURCED 180° FROM WELD LINE; CVN SAMPLES SOURCED 90° FROM WELD LINE; CVN SAMPLES TESTED BY 8mm STRIKER
Heat Treatment The minimum weld seam heat treatment temperature is 1650F.	
Steel Vendor Name and Manufactured 1276750,NUCOR STEEL HICKMAN,ARMOREL,AR,Melted and Manufactured in USA	

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Page:

5 / 5

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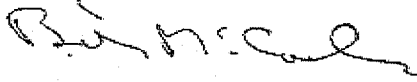

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31198405/SO/10		Customer's Reference: 621477		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe		Surface: Bare		Ends: Plain End Bevelled	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: XS2M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 20 PCS 863 FT 42636 LB	
						Nominal Weight: 49.61 LB/FT	

SUMMARY REPORT

Heat N°	Quantity	Length	Weight
	(Pieces)	FT	LB
1276750	20	863.999	42,636.034

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

	CUSTOMER . THIRD PARTY	TENARIS QUALITY DEPARTMENT SIGNATURE	
	INSPECTION COMPANY COMPAÑIA DE INSPECCIÓN		
	Company Name: N/A Employee Name: N/A	QUALITY CERTIFICATION DEPT. MCCORMICK Billy	CHIEF OF QUALITY CERTIFICATION DEPT. DOVER Michael

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MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

1 / 6

Date: June 08, 2018

MAVERICK TUBE CORPORATION
Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Nominal Weight: 49.61 LB/FT	
				Quantity: 21 PCS 896 FT		44082 LB	

TENSILE TEST

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	Y.S.		U.T.S.		Elongation		
				Ls	Sc	Type	Ori	Size	Min: 52 200 Max: 76 900		Req.	Min: 66 700 Max: 110 200	Lo	Min.	Obt.		
in		F	psi	psi	in	%	%										
1178014	131393	E1	1178014	B	AM	Ss	T	1.500	RT	59 035	69 302	2.0	25.0	41.8			
1278161	131401	E1	1278161	B	AM	Ss	T	1.500	RT	61 779	71 713	2.0	25.0	40.1			

AM: As manufactured

B: Body

E1 / E2: Ends of Sampling

Lo: Initial length

Ls: Location of sample

Max: Maximum

Min: Minimum

Obt: Obtained

Ori: Orientation

Req: Required

RT: Room temperature

Sc: Specimen condition

Ss: Strip specimen

T: Transversal

U.T.S: Ultimate tensile strength

Y.S: Yield strength

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	U.T.S.	
				Ls	Sc	Type	Ori	Size			Req.	
											Min: 66 700	
								in			Max: 110 200	
1178014	131393	E1	1178014	W	AM	Ss	T	1.500		F	psi	
1278161	131401	E1	1278161	W	AM	Ss	T	1.500		RT	74 541	
										RT	73 690	

AM: As manufactured

E1 / E2: Ends of Sampling

Ls: Location of sample

Min: Minimum

Ori: Orientation

Req: Required

Sc: Specimen condition

Ss: Strip specimen

T: Transversal

W: Weld

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MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

2 / 6

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MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

TENSILE TEST

Max: Maximum

RT: Room temperature

U.T.S: Ultimate tensile strength

CHEMICAL COMPOSITION

					Composition %														
					x 1														
					C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca
					B	N	CE-Pcm												
Heat N°	Sample N°	Lot N°	Ls	H	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.001
				P	Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.001
1178014	3956600	1178014	B.M.	H	0.04	1.07	0.006	0	0.19	0.14	0.04	0.05	0.01	0.03	0	0.032	0.004	0.011	0.002
1278161	3956558	1278161	B.M.	H	0.04	1.09	0.006	0	0.2	0.13	0.04	0.06	0.01	0.02	0	0.032	0.004	0.01	0.002
1178014	130945	1178014	B.M.	P	0.059	1.13	0.018	0.001	0.21	0.13	0.03	0.05	0.01	0.023	0.01	0.029	0.002	0.013	0.001
1178014	130946	1178014	B.M.	P	0.045	1.09	0.014	0.001	0.22	0.14	0.04	0.04	0.01	0.026	0.01	0.029	0.003	0.013	0.002
1278161	131351	1278161	B.M.	P	0.044	1.1	0.013	0	0.2	0.14	0.03	0.04	0.01	0.027	0.01	0.028	0.003	0.014	0.002
1278161	131352	1278161	B.M.	P	0.045	1.1	0.014	0	0.2	0.14	0.03	0.04	0.01	0.027	0.01	0.029	0.003	0.015	0.002

B.M: Base metal

H: Heat

Max: Maximum

P: Product

CE-Pcm: CE-Pcm

Ls: Location of sample

Min: Minimum

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Number:

100039617.0.1

Page:

3 / 6

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Customer: (Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Nominal Weight: 49.61 LB/FT	
				Quantity: 21 PCS 896 FT		44082 LB	

THROUGH WALL HARDNESS

Required values			Individuals			Average			Hardness type:HRBW		
Heat N°	Sample N°	Zone	Min: -	Max: 91.0	Var: --	Min: --	Max: --	Var: --			
Lot N°	Pipe N°	Specimen condition			Quad.			Scale			Avg.
		Ls	Sc								
1178014	131393	-	1178014	-	B	AM	-	HRBW			86.2
1278161	131401	-	1278161	-	B	AM	-	HRBW			85.9

AM: As manufactured

Ls: Location of sample

Quad: Quadrant

Avg: Average

Max: Maximum

Sc: Specimen condition

B: Body

Min: Minimum

Var: Variation

IMPACT TEST

Type: Charpy V			Orientation: T				Unit: ft.lb				Shear area %			
Position:			Temp: 32		Unit: F		Ind.Min.Req: 11 Req.Min.Avg: 15				Ind.Min.Req: - Req.Min.Avg: -			
Heat N°	Sample N°	Lot N°	Ls	Sc	T.T F	Size	Results				Results			
						-	1	2	3	Avg.	1	2	3	Avg.
1178014	131393	1178014	B	AM	-22	3/4	194	199	205	199	100	100	100	100
1278161	131401	1278161	B	AM	-22	3/4	223	221	219	221	100	100	100	100

AM: As manufactured

Ind. Min. Req: Individual Minimum Required

Sc: Specimen condition

Avg: Average

Ls: Location of sample

T.T: Test temperature

B: Body

Req. Min. Avg: Required minimum average

Temp: Temperature

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MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

4 / 6

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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

FLATTENING TEST

Standard:				Standard:			
Heat N°	Lot N°	Sample N°	Result	Heat N°	Lot N°	Sample N°	Result
1178014	1178014	131393	Good	1278161	1278161	131401	Good

HYDROSTATIC TEST

Pressure		Time	Results
Unit	Value	Seconds	
psi	2,610	5	Satisfactory

SUPPLEMENTARY INFORMATION

Supplementary Information	Supplementary Information
<p>This material has been manufactured, sampled, tested and inspected in accordance with this specification and has been found to meet the requirements called for by the above order.</p> <p>This product is silicon and/or aluminum fully killed.</p> <p>NDT OK UT with ID/OD N-10 Notches verified by 1/8" FDH</p> <p>INSPECTION CERTIFICATION 3.1 IN ACCORDANCE WITH EN 10204-2004</p>	<p>COMPLIANT TO ASTM A53-12 GRADE B AND ASME SA53-13 GRADE B</p> <p>Material meets the maximum hardness requirement of section A.2.1.2 of NACE MRO 175</p> <p>BODY TENSILE SOURCED 180° FROM WELD LINE; CVN SAMPLES SOURCED 90° FROM WELD LINE; CVN SAMPLES TESTED BY 8mm STRIKER</p>

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MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

5 / 6

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MAVERICK TUBE CORPORATION

Hickman Plant
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BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer: i		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: XS2M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 896 FT 44082 LB	
						Nominal Weight: 49.61 LB/FT	

SUPPLEMENTARY INFORMATION

Heat Treatment	
The minimum weld seam heat treatment temperature is 1650F.	
Steel Vendor Name and Manufactured	
1278161, NUCOR STEEL HICKMAN, ARMOREL, AR, Melted and Manufactured in USA	
Steel Vendor Name and Manufactured	
1178014, NUCOR STEEL HICKMAN, ARMOREL, AR, Melted and Manufactured in USA	

SUMMARY REPORT

Heat N°	Quantity	Length	Weight	Heat N°	Quantity	Length	Weight
	(Pieces)	FT	LB		(Pieces)	FT	LB
1178014	18	781.099	38,424.031	1278161	3	115	5,658.005

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MILL TEST CERTIFICATE

Number:

100039617.0.1

Page:

6 / 6

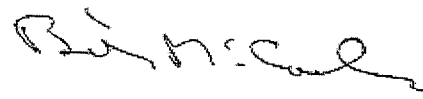

Date: June 08, 2018

MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in	Schedule: N/A	Length: Double Random	Quantity: 21 PCS 896 FT		44082 LB	Nominal Weight: 49.61 LB/FT	

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	CUSTOMER . THIRD PARTY	TENARIS QUALITY DEPARTMENT SIGNATURE	
	INSPECTION COMPANY COMPAÑIA DE INSPECCIÓN		
	Company Name: N/A Employee Name: N/A	QUALITY CERTIFICATION DEPT. MCCORMICK Billy	CHIEF OF QUALITY CERTIFICATION DEPT. DOVER Michael

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MILL TEST CERTIFICATE

Number:

100039616.0.1

Page:

1 / 6

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MAVERICK TUBE CORPORATION
Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer: 1		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API SL 45TH EDITION				Steel Grade: XS2M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 912 FT 44870 LB	
						Nominal Weight: 49.61 LB/FT	

TENSILE TEST

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Test temp	Y.S.	U.T.S.	Elongation			
				Ls	Sc	Type	Ori		Size	.5% EUL	Req.	Lo	Min.	Obt.
										Min: 52 200	Min: 66 700			
										Max: 76 900	Max: 110 200			
								F	psi	psi	in	%	%	
1178009	131395	E1	1178009	B	AM	Ss	T	1.500	RT	61 054	70 573	2.0	25.0	40.5
1178014	131393	E1	1178014	B	AM	Ss	T	1.500	RT	59 035	69 302	2.0	25.0	41.8

AM: As manufactured	Ls: Location of sample	Ori: Orientation	Ss: Strip specimen
B: Body	Max: Maximum	Req: Required	T: Transversal
E1 / E2: Ends of Sampling	Min: Minimum	RT: Room temperature	U.T.S: Ultimate tensile strength
Lo: Initial length	Obt: Obtained	Sc: Specimen condition	Y.S: Yield strength

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions		Test temp	U.T.S.
				Ls	Sc	Type	Ori	Size	Req.		
									Min: 66 700		
									Max: 110 200		
								in	F	psi	
1178009	131395	E1	1178009	W	AM	Ss	T	1.500	RT	75 808	
1178014	131393	E1	1178014	W	AM	Ss	T	1.500	RT	74 541	

AM: As manufactured	Min: Minimum	Sc: Specimen condition	W: Weld
E1 / E2: Ends of Sampling	Ori: Orientation	Ss: Strip specimen	
Ls: Location of sample	Req: Required	T: Transversal	

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Number:

100039616.0.1

Page:

2 / 6

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MAVERICK TUBE CORPORATION
Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443	Manufacturer's Works Order N°: N/A
Manufacturing Process: HFW		Product Type: Line Pipe			Surface: Bare
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2	Ends: Plain End Bevelled
Dimensions: 12.750 x 0.375 in	Schedule: N/A	Length: Double Random	Quantity: 21 PCS 912 FT 44870 LB		Nominal Weight: 49.61 LB/FT

TENSILE TEST

Max: Maximum

RT: Room temperature

U.T.S: Ultimate tensile strength

CHEMICAL COMPOSITION

					Composition %														
					x1														
					C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca
					B	N	CE-Pcm												
H					Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--
					Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P					Max	0.22	1.4	0.025	0.015	0.45	0.5	0.3	0.3	0.15	--	--	--	--	--
					Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heat N°	Sample N°	Lot N°	Ls	P	H	0.035	1.09	0.006	0	0.21	0.13	0.04	0.05	0.01	0.03	0	0.036	0.004	0.011
1178009	3956601	1178009	B.M.	H	0.04	1.07	0.006	0	0.19	0.14	0.04	0.05	0.01	0.03	0	0.032	0.004	0.011	0.002
1178014	3956600	1178014	B.M.	H	0.045	1.08	0.018	0.001	0.22	0.14	0.04	0.04	0.01	0.027	0.01	0.029	0.003	0.014	0.002
1178009	130914	1178009	B.M.	P	0.05	1.08	0.018	0.001	0.22	0.14	0.04	0.05	0.01	0.026	0.01	0.03	0.003	0.013	0.002
1178009	130915	1178009	B.M.	P	0.059	1.13	0.018	0.001	0.21	0.13	0.03	0.05	0.01	0.023	0.01	0.029	0.002	0.013	0.001
1178014	130945	1178014	B.M.	P	0.045	1.09	0.014	0.001	0.22	0.14	0.04	0.04	0.01	0.026	0.01	0.029	0.003	0.013	0.002
1178014	130946	1178014	B.M.	P															

B.M: Base metal

H: Heat

Max: Maximum

P: Product

CE-Pcm: CE-Pcm

Ls: Location of sample

Min: Minimum

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Number:

100039616.0.1

Page:

3 / 6

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MAVERICK TUBE CORPORATION

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(870) 776-5000 tel
(870) 776-5008 fax

Customer: (Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: XS2M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 912 FT 44870 LB	
						Nominal Weight: 49.61 LB/FT	

THROUGH WALL HARDNESS

Required values			Individuals			Average			Hardness type:HRBW		
			Min: -	Max: 91.0	Var: -	Min: -	Max: -	Var: -			
Heat N°	Sample N°	Zone	Lot N°	Pipe N°	Specimen condition		Quad.	Scale	Avg.		
					Ls	Sc					
1178009	131395	-	1178009	-	B	AM	-	HRBW	87.2		
1178014	131393	-	1178014	-	B	AM	-	HRBW	86.2		

AM: As manufactured

Ls: Location of sample

Quad: Quadrant

Avg: Average

Max: Maximum

Sc: Specimen condition

B: Body

Min: Minimum

Var: Variation

IMPACT TEST

Type: Charpy V			Orientation: T				Unit: ft.lb				Shear area %			
Position:			Temp: 32		Unit: F		Ind.Min.Req: 11		Req.Min.Avg: 15		Ind.Min.Req: -		Req.Min.Avg: -	
Heat N°	Sample N°	Lot N°	Ls	Sc	T.T F	Size	Results				Results			
						-	1	2	3	Avg.	1	2	3	Avg.
1178009	131395	1178009	B	AM	-22	3/4	213	208	210	210	100	100	100	100
1178014	131393	1178014	B	AM	-22	3/4	194	199	205	199	100	100	100	100

AM: As manufactured

Ind. Min. Req: Individual Minimum Required

Sc: Specimen condition

Avg: Average

Ls: Location of sample

T.T: Test temperature

B: Body

Req. Min. Avg: Required minimum average

Temp: Temperature

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Number:

100039616.0.1

Page:

4 / 6

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5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer: t		Customer's Order Item: 31214115/SO/10	Customer's Reference: 646443	Manufacturer's Works Order N°: N/A
Manufacturing Process: HFW		Product Type: Line Pipe		Surface: Bare
Standard or Specification: API 5L 45TH EDITION			Steel Grade: X52M PSL 2	Ends: Plain End Bevelled
Dimensions: 12.750 x 0.375 in	Schedule: N/A	Length: Double Random	Quantity: 21 PCS 912 FT 44870 LB	Nominal Weight: 49.61 LB/FT

FLATTENING TEST

Standard:				Standard:			
Heat N°	Lot N°	Sample N°	Result	Heat N°	Lot N°	Sample N°	Result
1178009	1178009	131395	Good	1178014	1178014	131393	Good

HYDROSTATIC TEST

Pressure		Time	Results
Unit	Value	Seconds	
psi	2,610	5	Satisfactory

SUPPLEMENTARY INFORMATION

Supplementary Information	Supplementary Information
<p>This material has been manufactured, sampled, tested and inspected in accordance with this specification and has been found to meet the requirements called for by the above order.</p> <p>This product is silicon and/or aluminum fully killed.</p> <p>NDT OK UT with ID/OD N-10 Notches verified by 1/8" FDH</p> <p>INSPECTION CERTIFICATION 3.1 IN ACCORDANCE WITH EN 10204-2004</p>	<p>COMPLIANT TO ASTM A53-12 GRADE B AND ASME SA53-13 GRADE B</p> <p>Material meets the maximum hardness requirement of section A.2.1.2 of NACE MRO 175</p> <p>BODY TENSILE SOURCED 180° FROM WELD LINE; CVN SAMPLES SOURCED 90° FROM WELD LINE; CVN SAMPLES TESTED BY 8mm STRIKER</p>

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.



MILL TEST CERTIFICATE

Number:

100039616.0.1

Page:

5 / 6

Date: June 08, 2018

MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
(870) 776-5008 fax

Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe				Surface: Bare	
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 912 FT 44870 LB	
						Nominal Weight: 49.61 LB/FT	

SUPPLEMENTARY INFORMATION

Heat Treatment	
The minimum weld seam heat treatment temperature is 1650F.	
Steel Vendor Name and Manufactured	
1178014,NUCOR STEEL HICKMAN,ARMOREL,AR,Melted and Manufactured in USA	
Steel Vendor Name and Manufactured	
1178009,NUCOR STEEL HICKMAN,ARMOREL,AR,Melted and Manufactured in USA	

SUMMARY REPORT

Heat N°	Quantity	Length	Weight	Heat N°	Quantity	Length	Weight
	(Pieces)	FT	LB		(Pieces)	FT	LB
1178009	3	129.199	6,364.006	1178014	18	783.1	38,506.032

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MILL TEST CERTIFICATE

Number:

100039616.0.1

Page:

6 / 6

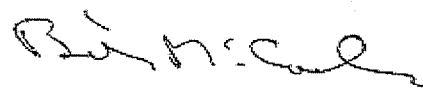

Date: June 08, 2018

MAVERICK TUBE CORPORATION

Hickman Plant
5020 N COUNTY RD 967
BLYTHEVILLE, AR 72315
(870) 776-5000 tel
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Customer:		Customer's Order Item: 31214115/SO/10		Customer's Reference: 646443		Manufacturer's Works Order N°: N/A	
Manufacturing Process: HFW		Product Type: Line Pipe		Surface: Bare			
Standard or Specification: API 5L 45TH EDITION				Steel Grade: X52M PSL 2		Ends: Plain End Bevelled	
Dimensions: 12.750 x 0.375 in		Schedule: N/A		Length: Double Random		Quantity: 21 PCS 912 FT 44870 LB	
						Nominal Weight: 49.61 LB/FT	

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

		CUSTOMER . THIRD PARTY		TENARIS QUALITY DEPARTMENT SIGNATURE	
		INSPECTION COMPANY COMPAÑIA DE INSPECCIÓN Company Name: N/A Employee Name: N/A		 QUALITY CERTIFICATION DEPT. MCCORMICK Billy	
				 CHIEF OF QUALITY CERTIFICATION DEPT. DOVER Michael	

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TEST CERTIFICATE – EAR CONTROLLED DATA

JD Fields & Company
55 Waugh Drive, Suite 1250
HOUSTON
TX
UNITED STATES
77007
Attn: Tom Biggs

REF No O137238 : Issue 1
Page 1 of 1
Ord No 61-68712
Date Reported 03/03/21

Item - 12.75"OD x 0.375"Wall Grade X52, Tenaris,
Heat #1178009

Specification - Con Ed G-8107-16 App A

Charpy Test - ASTM A370							
	Position	Dimensions [mm]	Temp [°F]	Energy Abs. [ft. lbs]	Avg. ft. lbs	% shear	Lat. Expansion [mils]
001:Weld Metal	Seam Weld	10x7.5x2V	-15.0	165, 93, 69	109	100, 40, 40	73, 70, 74
002:HAZ	Seam Weld	10x7.5x2V	-15.0	184, 182, 194	187	100, 100, 100	68, 72, 65
003:Transverse	Pipe Body	10x7.5x2V	-15.0	216, 209, 189	205	100, 100, 100	79, 86, 68
Specification Minimum					15		
Specification Maximum							



Heather Diaz
Production Manager
For and on authority of
Element Materials Technology

TEST CERTIFICATE – EAR CONTROLLED DATA


JD Fields & Company
55 Waugh Drive, Suite 1250
HOUSTON
TX
UNITED STATES
77007
Attn: Tom Biggs

REF No O137239 : Issue 1
Page 1 of 1
Ord No 61-68712
Date Reported 03/03/21

Item - 12.75"OD x 0.375"Wall Grade X52, Tenaris,
Heat #1178014

Specification - Con Ed G-8107-16 App A

Charpy Test - ASTM A370							
	Position	Dimensions [mm]	Temp [°F]	Energy Abs. [ft. lbs]	Avg. ft. lbs	% shear	Lat. Expansion [mils]
001:Weld Metal	Seam Weld	10x7.5x2V	-15.0	219, 70, 211	167	100, 40, 100	84, 72, 82
002:HAZ	Seam Weld	10x7.5x2V	-15.0	209, 216, 210	212	100, 100, 100	81, 76, 78
003:Transverse	Pipe Body	10x7.5x2V	-15.0	212, 213, 210	212	100, 100, 100	76, 81, 80
Specification Minimum					15		
Specification Maximum							



Heather Diaz
Production Manager
For and on authority of
Element Materials Technology