



MILL TEST CERTIFICATE

Number:

7495.1

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Tenaris Bay City, Inc.
7960 Hwy 35
Bay City, TX 77414
(979) 323-5200 tel

Date: March 15, 2019

Customer: [REDACTED]			Manufacturer's Works Order N°: 3018		
Manufacturing Process: SMLS		Product Type: OCTG		Surface: Laquered	
Standard or Specification: API 5CT Ed. 9th + PSP00355/4			Steel Grade: P110 PSL1 / P110-IC		Ends: Buttress
Dimensions: 9.625 x 0.435 in	Schedule: N/A	Length: Range 3	Quantity: 4 PCS 174 FT	7708 LB	Nominal Weight: 43.50 LB/FT

DELIVERY NOTES

Delivery Notes
Outbound Delivery number: 0100874603/000001

TENSILE TEST

Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Specimen dimensions Size	Test temp	Y.S.	U.T.S.	Elongation		
				Ls	Sc	Type	Ori			.6% EUL	Req.	Lo	Min.	Obt.
										Min: 110 000 Max: 140 000	Min: 125 000 Max: —			
783499	2604601	E1	HT109077	B	AM	Ss	L	1.500	RT	134 434	141 219	2	15.0	22.4
783499	2604637	E1	HT109078	B	AM	Ss	L	1.500	RT	132 578	140 024	2	15.0	22.6

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

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Dimensions: 9.625 x 0.435 in		Schedule: N/A		Length: Range 3		Quantity: 4 PCS		Nominal Weight: 7708 LB 43.50 LB/FT		
				174 FT						

CHEMICAL COMPOSITION

		Composition %																		
		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca	B	N		
Heat N°	Sample N°	Ls	P	H Max	--	--	0.03	0.03	--	--	--	--	--	--	--	--	--	--		
				Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Max	--	--	0.03	0.03	--	--	--	--	--	--	--	--	--	--	--	--
			Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
783499	2118913	B.M.	H	0.21	1.34	0.014	0.008	0.28	0.18	0.12	0.22	0.07	0.029	0.011	0.002	0.004	0.036	0.002	0.002	0.008
783499	2604601	B.M.	P	0.22	1.311	0.013	0.002	0.294	0.172	0.112	0.234	0.061	0.028	0.011	0.001	0.001	0.041	0.001	0.002	0.008
783499	2604603	B.M.	P	0.22	1.309	0.017	0.002	0.275	0.186	0.1	0.248	0.064	0.027	0.012	0	0.001	0.04	0.001	0.002	0.008

B.M: Base metal
 H: Heat
 Ls: Location of sample
 Max: Maximum
 Min: Minimum
 P: Product

THROUGH WALL HARDNESS

Required values				Individuals			Average			Hardness type:HRC,Hardness test as quenched											
		Min: --	Max: --	Var: --	Min: --	Max: --	Var: --														
Heat N°	Sample N°	Zone	Lot N°	Specimen condition				Scale	OD				MW				ID				Avg.
				Sc					1	2	3	Avg.	1	2	3	Avg.	1	2	3	Avg.	
783231	2603942	E1	CH1000663	AM				HRC	43.0	44.0	44.4	43.8	43.4	44.7	44.9	44.3	41.4	41.8	41.9	41.7	43.3
783231	2603942	E1	CH1000663	AM				HRC	45.1	44.9	45.0	45.0	45.2	44.8	45.2	45.1	44.8	45.5	45.5	45.3	45.1
783231	2603942	E1	CH1000663	AM				HRC	45.5	46.3	46.0	45.9	45.1	44.8	45.3	45.1	45.4	45.7	45.7	45.6	45.5
783231	2603942	E1	CH1000663	AM				HRC	44.0	46.0	45.9	45.3	44.7	44.7	44.6	44.7	44.9	45.1	45.4	45.1	45.0

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Quantity: 4 PCS				Nominal Weight: 43.50 LB/FT		Surface: Laquered	
174 FT				7708 LB		Ends: Buttress	

THROUGH WALL HARDNESS

AM: As manufactured	ID: Internal diameter	MW: Middle wall	Var: Variation
Avg: Average	Max: Maximum	OD: Outside diameter	
E1 / E2: Ends of Sampling	Min: Minimum	Sc: Specimen condition	

IMPACT TEST

Type: Charpy V				Orientation: T				Unit: FT-LBS				Shear area %			
Position:				Temp: 32		Unit: F		Ind.Min.Req: 5		Req.Min.Avg: 8		Ind.Min.Req: -		Req.Min.Avg: -	
Heat N°	Sample N°	Zone	Lot N°	Ls	Sc	T.T	F	Size				Results			
								1	2	3	Avg.	1	2	3	Avg.
783499	2604601	E1	HT109077	B	AM	31.4	1/2	33.0	33.0	34.0	33.0	100	100	100	100
783499	2604637	E1	HT109078	B	AM	30	1/2	37.0	36.0	38.0	37.0	88	92	90	90

AM: As manufactured	E1 / E2: Ends of Sampling	Req. Min. Avg: Required minimum average	T: Transversal
Avg: Average	Ind. Min. Req: Individual Minimum Required	Sc: Specimen condition	Temp: Temperature
B: Body	Ls: Location of sample	T.T: Test temperature	

COLLAPSE TEST

Heat N°	Sample N°	Unit: psi
		Minimum Pressure Required:
		5 620
783499	2604599	6 818

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HYDROSTATIC TEST

Pressure		Time	Results
Unit	Value	Seconds	
psi	8 000	5	Satisfactory

HEAT TREATMENT

Heat treatment: **Pipe**
Quench media of heat treatment process: **Water**
Temperature Scale: **°C**

Type	Temperature	Tolerance		Permanence (Mins.)
Quenched	180	- 180	30	23.816
Tempered	505	20	- 15	59.93

THREADING

Threading	Threading
The products have been threaded according to licensee and Tenaris Bay City internal procedures.	Thread Inspection 100% Satisfactory.

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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.

Drift: 8.625 inch minimum diameter, 12.000 inch minimum length
Non Destructive Test Satisfactory

Material previously certified

The present certificate is consolidating qualitative information of material that has already been certified in this facility for optimization purposes. The detail hereby states:
Heat #, Pieces #, Original MTC, Weight (lbs)
783499, 4, 6998, 3496

Steel Vendor Name and Manufactured

Hereby States: Bay City Heat #, Heat # at Origin, W/O at Origin, Original Supplier
783499, 783499,, SILCO TUBSA, Melted in RO and manufactured in USA.

Heat Treatment

Tempering minimum temperature: 505 C

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MARKING

Marking	Marking
<%URC%> TENARIS BC 5CT1919 <%API%> <%YMO%> 9-5/8 43.50 P SP 8000 BC DA 8.625 PSP00355 P110-IC <%WO%> HN <%HEAT%> <%PIPNUMBER%> <%DATE%> <%WEIGHT%> LB <%LENGTH%> FT MADE IN USA. <%API%> = API monogram <%YMO%> = Date of manufacture <%URC%> = Tenaris Unique Reference Code <%WO%> = WorkOrder	<%HEAT%> = Heat <%PIPNUMBER%> = Pipe Number <%DATE%> = Date <%WEIGHT%> = Weight <%LENGTH%> = Length

Stamping (Pipe)	Stamping (Pipe)
T BC 5CT1919 <%API%> <%YMO%> 43.50 P S <%HEAT%> <%API%> = API monogram	<%YMO%> = Date of manufacture <%HEAT%> = Heat

SUMMARY REPORT

Heat N°	Quantity	Length	Weight
	(Pieces)	(ft)	(lb)
783499	4	174	7708

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Dimensions: 9.625 x 0.435 in	Schedule: N/A	Length: Range 3	Quantity: 4 PCS 174 FT 7708 LB	Nominal Weight: 43.50 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 COMPAÑÍA DE INSPECCIÓN Company Name: N/A Employee Name: N/A		 QUALITY CERTIFICATION DEPT. Robert Cheyne	 CHIEF OF QUALITY CERTIFICATION DEPT. Mandeep Sekhon

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