

COD QC-3.1-Ed2 REV 6/2017



TMK-ARTROM S.A.

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 EUID: ROONRCJ28/9/1991; J28/9/31.01.1991  
 VAT No. RO 1510210/1992  
 Subscribed and Paid Share Capital: 291.587.538,34 lei

**INSPECTION CERTIFICATE - EN 10204: 2004 / 3.1**

No.: E24959 Date: 27.11.2017	Manufacturer's mark :	Purchase Order No.: PO#: CI-17-470
Buyer: Trans Am Piping Products Ltd.		
Specifications: ASTM A333-16; ASME SA333-15; ASTM A999-16; ASME B36.10M-15 Spec. SP-P01 REV.2		Dimensions: 2.375" x 0.218" Steel : Grade 6
Description: Hot rolled seamless steel pipes with bevelled ends; marking by painting at one end: TMK - ARTROM, manufacturer's mark, NPS 2"XS SCH80, dimensions, standard, SP-P01 REV.2, steel grade, HYDRO TEST PRESSURE 2500 PSI, LENGTH (FT), 5.03 LB/FT, HF, SMLS, LT-45, heat no., LOT, TRANS AM PIPING PRODUCTS LTD PO#CI-17-470, technical control sign, MADE IN ROMANIA		
Heat No.: 48619	Lot No.: 313530	Country of manufacture: Romania
Country of Melt: Romania		
Quantity	Pcs	Length m
		Weight kg

**Ladle Chemical Analysis (%)**

C	Mn	S	P	Si	Ni	Cr	Mo	Cu	Al	Nb	Ti	V	B	Ca	CEQ
0.19	1.07	0.003	0.011	0.23	0.07	0.05	0.01	0.17	0.022	0.002	0.002	0.003	.0005	0.002	0.397

Mn/C: 5.63

**Mechanical Properties**

TENSILE TEST (ASTM A370) - at room temperature- Test Specimen / Strip-longitudinal	Rt0.5 MPa	Rm MPa	A %	Reduction of area %
Dimension - Specimen (mm) 1. 19.35 x 5.75 / 2. 19.2 x 5.75	1. 405	541	33	65
Section - Specimen (mm) 1. 113.62 / 2. 112.71				
Length - Specimen (Lo) (mm) 1. 50.8 / 2. 50.8	2. 410	538	33	66

Heat treatment: normalized Hydraulic test pressure (ASTM A999): 2500 PSI for 5 sec.: OK Flattening test (ASTM A999): OK	Charpy V- Notch (ASTM A370) KV / Longitudinal 3.3 x 10 [mm] 21 ( 22; 18; 23 ) [ J ] (-55°C)	Process of melting - electric arc furnace, fully killed Hardness HRB: 82-83-82-83 Hardness HRC max 22 (acc to NACE MR01.75/ ISO 15156-2) NACE MR01.03/ISO 17495-1
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Visual and dimensional inspection of the tubes were performed and the results were satisfactory  
 The manufacturer of pipes is certified in acc. with ISO 9001: 2008, 14001:2004 and ISO 18001:2007  
 "NO REPAIR BY WELDING HAS BEEN CARRIED OUT"  
 The material "not contain intentional additions of elements such as lead, selenium, or sulphur to improve machinability"

**QC & LABORATORIES CHIEF**

Dipl. Eng. Silviu Barbulescu



**MILL INSPECTOR**

Eng. Iulian Andrei



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THIS IS FOR CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED WITH THE ORDERED SPECIFICATION AND THAT INFORMATION IS CORRECT, THEY MEET THE SPECIFICATION'S REQUIREMENTS AND ARE RECORDS IN FOUR COMPANY DOCUMENTS.