



CERTIFICATE

No. A/17-682678

Rev 00

Date 2017-09-06

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INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
755289	Customer order 2017-08-24	Order No. 489045	Subs No. 635623
003-00991	ITEMS	ABSMT No. 300-68061	C.Code 15
		ABSMT Dispatch note 03356/54	

Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
Steel making process Electric furnace	

Technical requirements ASTM A-213-17 AW, ASME SA-213-ED-15 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80
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EXTENT OF DELIVERY							
It	Product designation	Heat	Lot	Pieces	Kg	M	
01	THT-3R60-12-1.5 12.00 X 1.50	549464	29127	25	61.0	150.00	
				Total	25	61.0	150.00

TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
549464	0.019	0.39	1.62	0.030	0.012	17.19	13.05	2.63	
	N								
549464	0.041								
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
549464	0.017	0.39	1.61	0.030	0.010	17.23	13.02	2.61	
	N								
549464	0.045								

Quality assurance - Lars-Åke Bergqvist / QA-manager
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
29127	281	319	585	51	48

Hardness test

Lot	Min	Max
	HRB	HRB
29127	77	78

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Leak test: Eddy current test acc to EN ISO 10893-1, ASME SA-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed at a temperature of Min 1040° C and quenched.

Marking:

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.44 35 TP316/316L CFA SML NDE 12.00 X 1.50 MM HT 549464 SS LOT 29127 MADE IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) by TUEV NORD; notified body, reg.no. 0045.

The number of tests are based on the size of the manufacturing lot before cutting to finished lengths.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2008.

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The certificate is produced with EDP and valid without signature.