



CERTIFICATE

No. A/14-451401

Rev 00

Date 2014-10-16

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INSPECTION CERTIFICATE acc to
EN 10 204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
751044	Customer order 2014-10-16	Order No. 385092	Subs No. 579876
003-00991	ITEMS	ABSMT No. 300-20626	C.Code 15
		ABSMT Dispatch note 33420/54	

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-213-13 AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-13
 NACE MR0175/ISO 15156-3:2009
 PED 97/23/EC EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
01	THT-3R60-6-1	048038	32410	21	16.0	126.00
	6.00 X 1.00	048038	32414	69	53.0	414.00
			Total	90	69.0	540.00

KEY TO HEAT

Heat Code	Heat No.
048038	537819

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048038	0.020	0.39	1.64	0.029	0.0080	17.29	13.11	2.52
	N							
048038	0.037							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048038	0.020	0.40	1.64	0.030	0.008	17.36	13.13	2.53
	N							
048038	0.033							

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	4D
32410	305	350	564	51	51
32414	357	396	566	54	54

Hardness test

Lot	Min	Max
	HRB	HRB
32410	75	76
32414	74	76

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Leak test: Eddy current test acc to EN 10246-2, 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/ASME A/SA-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD EN 1.4435
TP316/316L CFA SMLS NDE 6.00 X 1.00 MM HT 537819 SS LOT 32410 MADE BY SANDVIK
IN SWEDEN *QA-TUBE*

SANDVIK 3R60 ASTM/ASME A/SA-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD EN 1.4435
TP316/316L CFA SMLS NDE 6.00 X 1.00 MM HT 537819 SS LOT 32414 MADE BY SANDVIK
IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (97/23/EC) 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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