



CERTIFICATE

No. A/14-390289

Rev 00

Date 2014-01-16

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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	
713656	Customer order 2014-01-16	Order No. 356784	Subs No. 564331
003-00991	ITEMS	ABSMT No. 300-97691	Dispatch note 15506/54
		C.Code 15	

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-213-11A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-10
 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	536559	19958	7	5.0	42.00
	6.00 X 1.00	536559	19960	83	63.0	498.00
				Total	90	68.0 540.00
TEST RESULTS						
Chemical composition (weight%)						
Heat	C	Si	Mn	P	S	Cr
536559	0.019	0.39	1.67	0.026	0.009	17.41
	N					Ni
536559	0.044					13.13
						Mo
						2.53
Chemical composition, product (weight%)						
Heat	C	Si	Mn	P	S	Cr
536559	0.018	0.39	1.68	0.029	0.007	17.37
	N					Ni
536559	0.038					13.12
						Mo
						2.53

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
19958	319	357	571	54	54
19960	332	370	582	53	53

Hardness test

Lot	Min	Max
	HRB	HRB
19958	74	75
19960	75	75

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-213AW A-269 EN 10216-5 TC1 EN 10305-1 EN 1.4435 TP 316/316L COLD SMLS NDE 6.00 X 1.00 MM HT 536559 SS LOT 19958 MADE BY SANDVIK I N SWEDEN *QA-TUBE*

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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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The certificate is produced with EDP and valid without signature.