CERTIFICATE

A03/Z02 **No. A/20-898564** **Rev 00**
Date 2020-06-18 **Page** 1/2

A02/Z03
INSPECTION CERTIFICATE acc to
EN 10204 3.1

INSPECTION STAMP
QA-TUBE

A06
PROCESSKONTROLL ITEMS AB
BOX 2088
444 02 STORA HÖGA
SWEDEN

Customer References A07
759717
Customer order
2020-06-17

003-00991 ITEMS

Sandvik References A08

Order No.	Subs No.	ABSMT Dispatch note
555747	685863	20908/54

ABSMT No. **C.Code**
300-21334 15

Material description B01/B04
SEAMLESS STAINLESS COLD FINISHED
HYDRAULIC TUBING

Steel/material Designations B02

Sandvik	AISI
3R60	TP316/TP316L

EN no
1.4435

Metallurgical process C70
Electric furnace

Technical requirements B03
ASTM A-213-19 AW, ASME SA-213-ED-19 AW, ASTM A-269-15A
NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015
PED 2014/68/EU EN 10216-5 TC1
HRB MAX 80

EXTENT OF DELIVERY B07-B13

It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-8-1.5 8.00 X 1.50	559150	26508	25	35.0	150.00
			Total	25	35.0	150.00

TEST RESULTS
Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo	Co	N
559150	0.019	0.38	1.64	0.035	0.009	17.25	13.16	2.61	0.11	0.041

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo	N
559150	0.020	0.40	1.62	0.035	0.009	17.21	13.13	2.60	0.043

Quality assurance - Sofia Åkesson / Q-Manager A05/Z02
MTC Service / Certificates

Tensile test at room temperature

	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
Lot	**Rp0.2**	**Rp1.0**	**Rm**	**A**	**4D**
26508	313	353	586	47	47

Hardness test

	Min	Max
Lot	**HRB**	**HRB**
26508	74	78

Following controls/tests have been satisfactorily performed:
- Flattening test.
- Flaring test
- 100% 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 AW EN 1.4435 TP316/3 16L CFA SML NDE 8.00 X 1.50 MM HT 559150 SS LOT 26508 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 9001:2015.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.