

**CERTIFICATE**

A03/Z02

No. A/20-917837**Rev****00****Date**

2020-10-22

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A02/Z03INSPECTION CERTIFICATE acc to
EN 10204 3.1**A06**PROCESSKONTROLL ITEMS AB
BOX 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP

QA-TUBE

Customer References 760127 003-00991 ITEMS	A07 Customer order 2020-10-09	Sandvik References Order No. 560534 Subs No. 689720 ABSMT No. 300-24708 Dispatch note 26830/54 C.Code 15	A08
Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	B01/B04	Steel/material Designations Sandvik 3R60 AISI TP316/TP316L EN no 1.4435	B02
Metallurgical process Electric furnace	C70		
Technical requirements 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			B03
EXTENT OF DELIVERY It Product designation Heat Lot Pieces Kg M 02 THT-3R60-6-1 559662 31336 50 39.0 300.00 6.00 X 1.00 Total 50 39.0 300.00			B07-B13
TEST RESULTS Chemical composition (weight%) Heat C Si Mn P S Cr Ni Mo 559662 0.018 0.39 1.75 0.034 0.008 17.24 13.08 2.62 N 559662 0.032 Chemical composition, product (weight%) Heat C Si Mn P S Cr Ni Mo 559662 0.017 0.39 1.74 0.034 0.006 17.30 13.12 2.62 N 559662 0.036			
Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates			A05/Z02

A01AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE556234683201
SE-81181 SANDVIKEN SWEDEN www.materials.sandvik mtc_service.smt@sandvik.com

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	4D
31336	320	356	587	48	48

Hardness test

Lot	Min	Max
	HRB	HRB
31336	70	71

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 6.00 X 1.00 MM HT 559662 SS LOT 31336 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.

