



CERTIFICATE

No. A/19-817167 Rev 00

Date 2019-04-15 Page 1/3

INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References	Customer order 2019-04-15	Sandvik References	Order No. 535088 Subs No. 669218 ABSMT No. 300-95553 C.Code 15 ABSMT Dispatch note 43636/54
757802			
003-00991 ITEMS			

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

Technical requirements
 ASTM A-213-18 AW, ASME SA-213-ED-17 AW, ASTM A-269-15A
 NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945-1:2016
 PED 2014/68/EU EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-12-1.5	554630	52532	13	31.0	78.00
	12.00 X 1.50	554816	53137	22	53.0	132.00
				Total	84.0	210.00

TEST RESULTS
Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
554630	0.019	0.38	1.63	0.034	0.009	17.30	13.12	2.62
554816	0.020	0.39	1.59	0.030	0.009	17.32	13.14	2.62
	N							
554630	0.039							
554816	0.043							

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

**Chemical composition, product (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
554630	0.019	0.38	1.64	0.034	0.009	17.34	13.08	2.62
554816	0.020	0.41	1.60	0.031	0.009	17.46	13.21	2.66
N								
554630	0.037							
554816	0.047							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
52532	298	334	583	47	47
53137	291	331	585	54	51

Hardness test

Lot	Min	Max
	HRB	HRB
52532	76	78
53137	73	75

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 12.00 X 1.50 MM HT 554630 SS LOT 52532 MADE IN SWEDEN *QA-TUBE *

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3 16L CFA SML NDE 12.00 X 1.50 MM HT 554816 SS LOT 53137 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.