

**CERTIFICATE****No. A/15-470888****Rev 00****Date** 2015-01-14**Page** 1/2INSPECTION CERTIFICATE acc to  
EN 10 204 3.1Processkontroll Items AB  
Box 2088  
444 02 STORA HÖGA  
SWEDENINSPECTION STAMP  
QA-TUBE

<b>Customer References</b>		<b>Sandvik References</b>	
751386	Customer order 2015-01-13	Order No. 392800	Subs No. 584137
003-00991	ITEMS	ABSMT No. 300-24193	Dispatch note 38800/54
		C.Code 15	
<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING		<b>Steel/material Designations</b> Sandvik AISI 3R60 TP316/TP316L EN no 1.4435	
<b>Steel making process</b> Electric furnace			
<b>Technical requirements</b> 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			
<b>EXTENT OF DELIVERY</b>			
It	Product designation	Heat	Lot
01	THT-3R60-10-1	540194	35887
	10.00 X 1.00		
		Pieces	Kg
		10	14.0
			M
			60.00
		Total	10
			14.0
			60.00
<b>TEST RESULTS</b>			
<b>Chemical composition (weight%)</b>			
Heat	C	Si	Mn
540194	0.021	0.39	1.61
	P	S	Cr
	0.031	0.008	17.28
	Ni	Mo	
	13.10	2.52	
	N		
540194	0.045		
<b>Chemical composition, product (weight%)</b>			
Heat	C	Si	Mn
540194	0.023	0.44	1.61
	P	S	Cr
	0.032	0.005	17.26
	Ni	Mo	
	13.04	2.53	
	N		
540194	0.043		
<b>Tensile test at room temperature</b>			
	Yield strength	Tensile strength	Elongation
	MPa MPa	MPa	% %
Lot	Rp0.2 Rp1.0	Rm	A 4D
35887	324 366	577	50 45
<b>Quality assurance - Lars-Åke Bergqvist / QA-manager</b> <b>MTC Service / Certificates</b>			

**Hardness test**

	Min	Max
Lot	HRB	HRB
35887	74	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-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD EN 1.4435  
TP316/316L CFA SMLS NDE 10.00 X 1.00 MM HT 540194 SS LOT 35887 MADE BY SANDVI  
K 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.

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.