

Type of inspection document : Inspection certificate acc. to EN 10204 / 3.1	A02	Internal order No.: 10060137 - 60	A08
Purchaser : ALLEIMA BENELUX B.V. . AMUNDSENWEG 4 5928 LT VENLO THE NETHERLANDS	A06	Purchase order No. : 800771 Purchaser's reference : 800771 Project Id. : 4003405	A07
Product : Seamless cold finished tube	B01/B04	Steel designation : 5R75 / 5R75	B02
Dimension (OD x WT) : 6,00 x 1,00AW mm	B09/B10	Melting process : AOD	C70
Technical requirements : EN 10216-5 TC1 - 2021 EN 10305-1 (Only Tolerances - Table 5) AD 2000 W2 Einbaurohre - 2022 AD 2000 W10 - 2019 Alleima SPEC S-08921 PED 2014/68/EU			B03
Supplementary information : Manufacturing of stainless steel tubes in grade 5R75 / 1.4571 from steel origin: Alleima Tube AB, Sweden The qualified pre-material supplier is mentioned in the section "Extent of material delivery". Tube lenght 6000 mm (-0/+5 mm)			B14
The products, covered by this certificate, comply with specification and requirements of the order.			Z01
Originator of the document : QA - AC	A05/Z02	Inspector's stamp:	Z03

Chemical composition (Heat analysis)

Heat	C [%]	Si [%]	Mn [%]	P [%]	S [%]
566406	max 0.080 0,034	max 1.000 0,450	max 2.000 1,220	max 0.040 0,026	max 0.015 0,007

Heat	Cr [%]	Ni [%]	Mo [%]	Ti [%]
566406	16.500-18.500 16,750	10.500-13.500 12,160	2.000-2.500 2,020	max 0.700 0,430

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Product check analysis

Heat	Lot	C [%]	Si [%]	Mn [%]	P [%]	S [%]
		max 0.080	max 1.000	max 2.000	max 0.040	max 0.015
566406	2089622-11	0,040	0,420	1,240	0,026	0,010

Heat	Lot	Cr [%]	Ni [%]	Mo [%]	Ti [%]
		16.500-18.500	10.500-13.500	2.000-2.500	max 0.700
566406	2089622-11	16,960	12,060	2,050	0,399

Extent of material delivery

Heat	Lot	Hollow supp.	No. of HTcycles ¹⁾	Pieces	Total length [m]	Total weight [kg] ²⁾
566406	2089622-11	ALLEIMA SE	1	1 170	7 020.000	870.480

Note : ¹⁾ Number of heat treatment cycles performed on the tubes.

²⁾ Weight quantity is theoretically calculated, it might differ compared to shipping documents.

Chomutov, date : 15.3.2023

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Flaring test in acc. with EN 10216-5

Heat	Lot	ST	Test result [pass/fail]
			pass
566406	2089622-11		pass

Hardness test (HRB) in acc. with ASTM E18 / 7-2-1261

Heat	Lot	ST	Hardness [HRB]
			max 90,000
566406	2089622-11		75,000
566406	2089622-11		75,000

Intergranular corrosion testing in acc. with EN ISO 3651-2/A

Heat	Lot	ST	Test result [pass/fail]
			pass
566406	2089622-11		pass

Longitudinal tensile test in acc. with EN ISO 6892-1

Heat	Lot	ST	Rp0,2 [MPa]	Rm [MPa]	Amb.temper. [°C]	A5 [%]	Rp1,0 [MPa]
			min 220,000	515,000-710,000	10,000-35,000	min 35,000	min 250,000
566406	2089622-11		289,100	589,200	23,000	59,000	321,300

Microstructure evaluation and Grain size WI-3815/ASTM E112

Heat	Lot	ST	G.B.Cr.Carbides [No/Yes]	Grain size [(G)]
			No	5,000-14,000
566406	2089622-11		No	7,000

Dimensional check

Test results comply with specified criteria.

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HT - Final heat treatment of straight tubes

Bright annealing at 1080°C with min. 0,25 minute holding time.

Quenched by forced cooled inert gas.

Inside cleanliness check

Test results comply with specified criteria.

NDT - Eddy current flaw detection in acc. EN ISO 10893-1

Test results comply with specified criteria.

NDT - Visual inspection

Test results comply with specified criteria.

PMI - 100% positive material identification

Test results comply with specified criteria.

Statement

The raw material is free from radioactive contamination.

Statement

Material free from mercury and asbestos contamination.

Statement

The material have been manufactured within the scope of certified Quality Management System maintained in accordance with EN ISO 9001:2015.

Straightness check

Test results comply with specified criteria.