

INSPECTION CERTIFICATE acc to EN 10 204 3.1

PG Flowteknik Scandinavia ApS

Rugvænget 19 C
DK-2630 Tåstrup
Denmark

r30207-1

Customer references		Calamo References	
Att	Michael Grøn	Order no	111989
Order no	PO11339	Order line	10
Package mark		Delivery No	1
		Item	0300360
Product description			
CALAMO TUBE 10X1 CQE 316L			
Technical Specification			
CALAMO PRODUCT SPECIFICATION CQE CLEANED FOR OXYGEN SERVICE (CFOS) ACC. TO ASTM G93 MAX 20 mg/m2 HYDROCARBON MACHINED ENDS. INSIDE RA <=0,4 µm (<=16 µinch). FERRITE <0,2%			
Extent of delivery			
Quantity	Manufacturing no	Lot	Heat
282.00 m	82681-10	HS206272-1	N26817
Inspection and testing during manufacturing Calamo			
Visual inspection	CQE 932/632	Approved	
Surface roughness, Ra inside	ANSI/ASME B 46.1/ISO 4288	Approved	
Cleanliness control	CQE 932/632	Approved	
Final inspection	CQE 932/632	Approved	
Calamo AB maintains a management system according to ISO 9001:2015 and ISO 14001:2015, certified by a notified body established within the European Community (EU) and has undergone a specific assessment for materials.			
Certification body: ISO 9001/14001: TÜV NORD UK, Notified body No. 0065. PED 2014/68/EU and AD 2000-Merkblatt W0: TÜV NORD systems GMBH & CO, Notified body No. 0045.			
Certificates: ISO 9001/14001 Certificate No. GB01933. PED 2014/68/EU Certificate No. 07/202/1326/WZ/2309/21. AD 2000-Merkblatt W0 Certificate No. 07/203/1326/WP/2309/21. The material complies with PED 2014/68/EU. Welded tubes and fittings manufactured of welded tubes are approved for category I and II . Mark of the inspection representative: Calamo QT			
The delivered products comply with the order acknowledgment.			
The material is manufactured according to a quality system, approved and registered to ISO 9001:2015.			
Steel making process: Electric Furnace			
The material is in compliance with EU Directive 2011/65EU (RoHS2)			
Quality-Daniel Skoglund / QA Manager			
The certificate is produced with EDP and valid without signature .			

Technical performance and control/test data for prematerial

Lot HS206272-1
Heat N26817
Size 10X1
Steel grade W.NR 1.4404 TP316L EN 1.4404
 SEAMLESS TUBES ACC.TO ASTM A269/A270/ASME SA213 AW/
 EN 10216-5 TC1/AD-2000-W2 EINBAUROHRE
 BN2/EN ISO 1127 D4/T3 BRIGHT ANNEALED COLD FINISH.

Chemical composition, heat analysis (weight %)

C	Si	Mn	P	S	Cr	Ni	Mo	N
0.014 %	0.49 %	0.94 %	0.031 %	0.007 %	16.66 %	12.10 %	2.03 %	0.01 %

Chemical composition, product analysis (weight %)

C	Si	Mn	P	S	Cr	Ni	Mo	N
0.013 %	0.49 %	0.95 %	0.031 %	0.008 %	16.67 %	12.10 %	2.03 %	0.01 %

Tensile test at room temperature

Yield Strength Rp 0.2	Yield Strength Rp 1.0	Tensile strength Rm	Elongation A (A5)	Elongation 2" (A2)
262 N/mm2	299 N/mm2	543 N/mm2	50 %	47 %
260 N/mm2	296 N/mm2	540 N/mm2	51 %	47 %
Hardness				
78 HRB				
79 HRB				

Nondestructive testing

Eddy current test EN	EN ISO 10893-1	Approved
Eddy current test ASTM/ASME	ASTM A1016/A1016M	Approved
Ferrite content < 0,2 %	BN2 1997	Approved
Material Identification (PMI)	EN 10216-5	Approved
Visual inspection		Approved
Dimensional control	ASTM A269/A270/SA-1016/EN ISO 1127	Approved

Destructive testing

Flange test	ASTM A270-S2 / SA-1016	Approved
Flattening test	ASME SA-213/EN-ISO 8492/ASTM SA-1016	Approved
Flaring test/Drift Expanding test	ASME SA213/ASTM SA-1016	Approved
Intergranular corrosion test EN	EN ISO 3651-2 Method A	Approved
Intergranular corrosion test ASTM/ASME	ASTM A 262 Practice E	Approved

ORIGIN PREMATERIAL

Country of origin South Korea

Receiving inspection Calamo

Visual inspection		Approved
Length		Approved
Surface roughness, Ra inside	ANSI/ASME B 46.1/ISO 4288	Approved
Angle control ends		Approved
Outside diameter min	ASTM A269/A270/EN ISO 1127 D4	Approved
Outside diameter max	ASTM A269/A270/EN ISO 1127 D4	Approved
Wall thickness min	ASTM A269/A270/EN ISO 1127 T3	Approved
Wall thickness max	ASTM A269/A270/EN ISO 1127 T3	Approved