

Specification
TCC/TCC.1

Widely used in production, process measurement and photovoltaic

TCC / TCC.1

bf bright finished
ac anodical cleaned



1. SURFACES QUALITIES

Tubes and fittings:	Inner surface	Outer surface
● TCC (bf)	not defined ; on request Ra _{avg.} ≤ 0,80 μm (32 μin)	not defined
● TCC.1 (ac)	not defined ; on request Ra _{avg.} ≤ 0,80 μm (32 μin)	not defined

Pipe and pipe fittings:	Inner surface	Outer surface
● TCC (bf)	not defined ; on request Ra _{avg.} ≤ 0,80 μm (32 μin)	not defined
● TCC.1 (ac)	not defined ; on request Ra _{avg.} ≤ 0,80 μm (32 μin)	not defined

Additional notes:

- Tubes and fittings are prepared for orbital welding.
- Other specified surfaces or ends are available upon request.
- Pipes and fitting will be supplied with a square cut. Different end preparations may be agreed on.
- The Ra value in the cold worked area of fittings (inner and outer surface) and on the surface of circumferential welds is not defined. For Dimensions OD ≤ 3/8" (5.00 mm) roughness is not measured.
- TCC (bf): Cleaning and test procedure ASTM A 632, S3 and ASTM G93 – level D.
- TCC.1 (ac): Free of oil and grease acc. to CGA G-4.1-2018 and ASTM G93 – level B.

2. MATERIALS

Austenitic stainless steel tubes and fittings (seamless or welded) in:

● TCC / TCC.1	1.4435 / UNS S31603 (316L) 1.4404 / UNS S31603 (316L) UNS S31603 (316L) UNS S30403 (304L)
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Hardness equivalent to:

- max. 180 HV* according to DIN EN ISO 6507-1
- max. 90 HRB* according to DIN EN ISO 6508-1

* comparable to ASTM E-384 (HV) and ASTM E 18-22 (HRB)

3. DIMENSIONS

Imperial:	according to ASTM A269 / A270 / A63	
OD x WT	1/8" x 0.022" to 6" x 0.109"	3,18 x 0,56 mm to 152,40 x 2,77 mm
Metrisch:	according to DIN 11866	
OD x WT	6,00 x 1,00 mm to 35,00 x 1,50 mm	Lenght: 6000 mm -100/+90
Manufacturing process:	Seamless tubes (≤ 1")	Welded or seamless tubes (> 1")
Pipe:	according to ASTM A312	
OD x WT	NPS 8, 10, 12, 16, 20 Schedule 5S and 10S	219,08 x 3,76 mm bis 508,00 x 5,54 mm
Manufacturing process:	Welded tubes	

4. QUALITY AND TEST PROCEDURES



Verification of basic test certificate



Visual inspection



Endoscopic inspection of bright finished tubes



Verification of Dimmensions



Roughness measurements

5. TECHNICAL TERMS OF DELIVERY

Tubes and fittings are prepared for orbital welding:

Tubes

Acc. to ASTM A632 / A269 / A270, DIN EN 10217-7 / 10216-5 with a length of 5900 - 6090 mm (max. 10% short lengths of min. 3000 mm possible). TCC.1 tubes with an outside diameter of 5.00 mm or smaller are supplied with a length of 2950 mm (+/-50 mm).

Fittings

Prematerial according to DIN11865, ASTM A 403 (Pipe) and ASME B16.9 (Pipe).

Machined components

Prematerial acc. to DIN EN 10088-3 / DIN 17440 / ASTM A 479 / DIN EN 10088-2 / ASTM A 240

Marking always with

DOCKWEILER / DW-Number / Dimension / Material / Heat number

Tube, pipe and fittings are permanently marked. The marking must provide all necessary information to trace back the heat number and the material grade.

6. DOCUMENTATION, PACKAGING & SHIPPING

Documentation

The documentation result by the Dockweiler Inspection Certificate 3.1 according to DIN EN 10204. Optional online documentation WebCert.

Packaging

Bright finished tubes and fittings are capped with white/transparent PE caps and packaged in PE foil. The batch label contains the information TCC.

Anodically cleaned tubes and fittings are capped with PE/PA squares and white/transparent PE caps and packed in PE foil. The batch label contains the information TCC.1.

Shipping

Delivery in tubular container or wooden crate, fittings in strong cardboard box with shock absorbing filler.