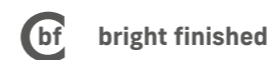


Specification
finetron

For gas applications in semiconductor industry as well as in photovoltaics



1. SURFACES QUALITIES

Tubes and fittings:	Inner surface (bf)	Outer surface
● finetron	Ra_{avg.} ≤ 0,40 µm (16 µin)	Ra_{avg.} ≤ 1.0 µm (40 µin)
Additional notes:	<ul style="list-style-type: none"> - Tubes and fittings are prepared for orbital welding. - Other specified surfaces or ends are available upon request. - 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. - Bright finished Surface treatment: Cleaning and test procedure ASTM A 632, S3. - Free of oil and grease acc. to CGA G-4.1-2018 and ASTM G93 – level C. 	

2. MATERIALS

Austenitic stainless steel tubes and fittings (seamless or welded / depending on diameter):	
● finetron	1.4404 / UNS S31603 (316L) 1.4435 / UNS S31603 (316L) UNS S31603 (316L)
Hardness equivalent to:	<ul style="list-style-type: none"> - max. 180 HV* according to DIN EN ISO 6507-1 - max. 90 HRB* according to DIN EN ISO 6508-1 <p>* comparable to ASTM E-384 (HV) and ASTM E 18-22 (HRB)</p>

3. DIMENSIONS

Imperial:	according to ASTM A269 / A632	
OD x WT	1/4" to 6" (0.250 x 0.035 inch to 6.000 x 0.109 inch)	6,35 x 0,89 mm to 152,40 x 2,77 mm
Lenght	min. 19.36 ft to max. 19.98 ft	6000 mm -100/+90
Metric:		
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")

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).

Tube fitting components

Prematerial acc. to DIN 11865, DIN EN 10217/ 10216-5 and ASTM A 269/ A 632

Machined components

Prematerial acc. to DIN EN 10055-3 / DIN 17440 and ASTM A 479

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 transparent PE caps and are individually sealed in PE foil.

The batch label on the foil contains the information finetron.

Shipping

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