

For Pharma, Biotech and other Life Science Industries

ASME BPE

mp ASME BPE SF1 / Mechanically polished

ep ASME BPE SF4 / Electropolished



1. SURFACES QUALITIES

Tubes and fittings:	Inner surface (mp)*
ASME BPE SF0 - on request	No finish requirements
ASME BPE SF1	Ra max. ≤ 20 µin (0.51 µm)
ASME BPE SF2 - on request	Ra max. ≤ 25 µin (0.64 µm)
ASME BPE SF3 - on request	Ra max. ≤ 30 µin (0.76 µm)

Tubes and fittings:	Inner surface (ep)
ASME BPE SF4	Ra max. ≤ 15 µin (0.38 µm)
ASME BPE SF5 - on request	Ra max. ≤ 20 µin (0.51 µm)
ASME BPE SF6 - on request	Ra max. ≤ 25 µin (0.64 µm)

Surface treatment:	<ul style="list-style-type: none"> - Mechanically polished (or any other finishing method that meets the Ra max.) *: Cleaning and test procedure ASTM A 632, S3 - Electropolished: Procedure acc. to Spec. Doc. 8.4-40/3.2/3.3.2 <p>Free of oil and grease acc. to CGA G-4.1-2018 and ASTM G93</p>
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2. MATERIALS

ASME BPE	UNS S31603 (316L)* UNS S31603 (316L) / 1.4404* UNS S31603 (316L) / 1.4435* * defined sulphur of 0.005 - 0.017%	UNS N08904 (904L) / 1.4539 UNS N06022 (C22) / 2.4602 UNS N08367 (AL-6XN)
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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>
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3. DIMENSIONS

Imperial	acc. to ASME BPE, Part DT	
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
Length of tubes:	min. 19.36 ft to max. 19.98 ft (6000 mm -100/+90)	
Manufacturing process:	Seamless tubes ≤ 1" OD (25.40 mm)	Welded tubes ≥ 1 1/2" OD (38.10 mm)

4. QUALITY AND TEST PROCEDURES

Verification of basic test certificate	Visual inspection	Endoscopic inspection of bright finished tubes
Verification of dimensions	Roughness measurements	

5. TECHNICAL TERMS OF DELIVERY

Tubes and fittings are prepared for orbital welding according to the following standards:

Tubes

acc. to ASTM A 269 / A 632 / A 312 (Pipe), DIN EN 10217-7 / 10216-5 with a length of 19.35 ft - 19.98 ft (5900 - 6090 mm), max. 10% short lengths of min. 9.84 ft (3000 mm)

Tube fitting components

Prematerial acc. to ASTM A 269 / A 632 / A 312 / A 403 (Pipe), DIN EN 10217-7 / 10216-5

Machined components

Prematerial acc. to ASTM A 479, DIN EN 10088-3, DIN 17440, ASTM A 182 (Pipe)

Marking always with

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

Tube, pipe and fittings shall be permanently marked as per Dockweiler guideline AA 7.5.3-80. The marking must provide all necessary information to trace back the heat number and the material grade.

6. DOCUMENTATION, PACKAGING AND SHIPPING

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

Mechanically polished tubes and fittings are closed with transparent PE caps and are individually sealed in PE foil.

Electropolished tubes and fittings are closed with yellow PE caps and are individually sealed in PE foil.

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

The batch label on the foil contains the information ASME BPE SF1 or ASME BPE SF4.