

Specification
ASME BPE

For pharma, biotech and other life science industries

ASME BPE

 **ASME BPE SF1 / mechanically polished**

 **ASME BPE SF4 / electropolished**



1. SURFACE QUALITIES

Tubes and fittings: Inner surface (mechanically polished)*

ASME BPE SF0 - on request	No finish requirements
ASME BPE SF1	Ra_{max.} ≤ 0,51 µm / 20 µin (Dockweiler Standard)
ASME BPE SF2 - on request	Ra _{max.} ≤ 0,64 µm / 25 µin
ASME BPE SF3 - on request	Ra _{max.} ≤ 0,76 µm / 30 µin

Tubes and fittings: Inner surface (electropolished)

ASME BPE SF4	Ra_{max.} ≤ 0,38 µm / 15 µin (Dockweiler Standard)
ASME BPE SF5 - on request	Ra _{max.} ≤ 0,51 µm / 20 µin
ASME BPE SF6 - on request	Ra _{max.} ≤ 0,64 µm / 25 µin

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 - Free of oil and grease acc. to CGA G-4.1-2018 and ASTM G93 – level B (SF4) / level C (SF1)
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2. MATERIALS

ASME BPE	UNS S31603 (316L)*, UNS S31603 (316L), 1.4404, 1.4435*
	* defined sulphur of 0.005 - 0.017%

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

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
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

Acc. to ASME BPE-2024, ASTM A 269/270, tubes with a length of 5900 - 6090 mm (19.35 ft - 19.98 ft), max. 10% short lengths of min. 3000 mm (9.84 ft). For electropolished tubes with an outer diameter ≤ 5.00 mm, the length is 2950 +/- 50 mm.

Marking always with

DOCKWEILER / DW-Number / Dimension / Material / Heat Number / ASME Certification Mark, Surface Finish Designation

Tubes, pipes and fittings shall be permanently marked as per ASME BPE-2024, DT-11. The marking must provide all necessary information to trace back the heat number and the material grade.

6. DOCUMENTATION, PACKAGING AND SHIPPING

Documentation

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

Packaging

Mechanically polished tubes and fittings are closed with transparent PE caps and are individually sealed in PE foil. The batch label on the foil contains the information ASME BPE SF1.

Electropolished tubes and fittings are closed with PA/PE squares and yellow PE caps, sleeved and sealed in PE. The batch label on the foil contains the information ASME BPE SF4.

Shipping

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