

## Welded & Seamless Stainless Steel Pipe & Fittings

### Sanitary & BPE

#### Mechanically Polished ID and OD

Inside Diameter (ID)		Outside Diameter (OD)		Surface Finish Code						
Ra (Max)	Surface Treatment	Ra (Max)	Surface Treatment	ASME BPE	Alfa-Laval	Dixon	S&O	TopLine	VNE	SPX
--	Mill	--	Mill	SF0			PU or #1		PX	#0 (PU)
--	Mill	32	Mechanical Polish				#5			
20	Mechanical Polish	--	Mill	SF1			PC	No. 3	PC	#3 (PC)
20	Mechanical Polish	32	Mechanical Polish	SF1	PL	PL	PL	No. 7	PL	#7 (PL)
25	Mechanical Polish	32	Mechanical Polish	SF2						
30	Mechanical Polish	32	Mechanical Polish	SF3						
32	Mechanical Polish	--	Mill				#3			
32	Mechanical Polish	32	Mechanical Polish				#7			

#### Electropolished ID and Mechanically Polished OD

Inside Diameter (ID)		Outside Diameter (OD)		Surface Finish Code						
Ra (Max)	Surface Treatment	Ra (Max)	Surface Treatment	ASME BPE	Alfa-Laval	Dixon	S&O	TopLine	VNE	SPX
15	Electropolish	--	Mill	SF4			PD	No. 3 EP	PD	#3E (PD)
15	Electropolish	32	Mechanical Polish	SF4	PM	PM	PM	No. 7 EP	PM	#7E (PM)
10	Electropolish	--	Mill							#3E (PJ)
10	Electropolish	32	Mechanical Polish						PR	#7E (PR)
20	Electropolish	32	Mechanical Polish	SF5						
25	Electropolish	32	Mechanical Polish	SF6						

#### Finish Designations

Finish Number	Description
1	Mill Finish (bright annealed, pickled, sand blast or tumbled)
3	Polished 32 Ra inside diameter (ID) only
5	Polished 32 Ra outside diameter (OD) only
7	Polished 32 Ra outside & inside diameter (ID & OD)
3A	Polished 150 grit outside (OD), 32 Ra inside diameter (ID)

#### Surface Finish - Sheet

Finish Number	Description
#1	Rough, dull, non-uniform appearance
# 2B	More reflective, like a cloudy mirror
#2D	Uniform, dull silver-gray appearance
BA or 2BA	Bright Annealed - mirror-like with some cloudiness
#3	AKA grinding, roughing or rough grinding. Coarse finish usually applied before mfg.
#4 Arch.	AKA brushed, directional or satin finish, Fine uniform polishing lines.
#4 Sanitary	Much finer than #4 Architectural finish, enhancing physical appearance
#6	AKA fine satin finish; less reflective than #4 Architectural finish
#7	Semi-bright finish with some very dull polishing lines
#8	AKA mirror finish

#### Grit vs RA

Grit	Ra
36	142
60	87
80	70
120	52
150	42
180	32
180 + EP	25
240	20
240 + EP	15
320	10
320 + EP	5-10
400	9
Mirror	4 ±

#### Common Names

Common Name	Ra (µ-In)	Grit Number	USA Finish	"Rmax (µ-In)"	ISO Number	ASTM STD Ra (µ-In)	Japanese STD
	2000	--	--	7875	N12	--	--
	1000	--	--	3940	N11	--	--
	500	--	--	1968	N10	--	--
Mill Plate	250	60	#1	985	N9	140 max	--
	125	--	--	492	N8	--	--
Satin Sheet	70 max, 40-60	80	#2	--	--	--	--
	63	--	--	--	N7	--	--
	52	100 to 120	#3	--	--	--	--
Commercial #4	40-60	120	#4	--	--	--	--
Sanitary/Dairy Finish	42 max, 30-35	150	#4	--	--	45 max	--
ANSI #4	32	--	--	126	N6	--	--
3A Sanitary Finish	32 max, 20-32	180	#4	--	--	25 max	Buff #100
Biotech Finish	25 max, 20-25	200 to 220	#4	--	--	--	--
Fine Satin Finish	15-20	240	#6	--	--	8-20	--
	16	--	--	63	N5	6-15	--
Semi-Bright Finish	12 max, 8-12	320	#7	--	--	--	--
	12	--	--	59	--	--	Buff #200
	8	--	--	31	N4	--	Buff #300
Mirror Finish	4-8	400	#8	--	--	--	--
Supermirror Finish	<4, 3-8	500	#8	--	--	--	--
Supermirror Finish	4	500	#8	16	N3	--	Buff #400 (approx)
	2	--	--	8	N2	--	--
	1	--	--	4	N1	--	--