

Surface Finish Conversion Chart

Ra · ISO N grades · RMS · Rz (approximate)

Exact: 1 μin = 0.0254 μm; N grades per ISO 1302. Approximate: RMS = 1.11 × Ra (sine profile); Rz = 4–7 × Ra rule of thumb (Schuetz, Modern Machine Shop). Measure the parameter on the drawing.

N grade	Ra (μm)	Ra (μin, exact)	Ra (μin, callout)	RMS Rq ~ (μm)	RMS Rq ~ (μin)	Rz ~ (μm)
N12	50	1969	2000	55.5	2186	200–350
N11	25	984	1000	27.8	1093	100–175
N10	12.5	492	500	13.9	547	50.0–87.5
N9	6.3	248	250	7.00	275	25.2–44.1
N8	3.2	126	125	3.55	140	12.8–22.4
N7	1.6	63.0	63	1.78	70.0	6.40–11.2
N6	0.8	31.5	32	0.889	35.0	3.20–5.60
N5	0.4	15.7	16	0.444	17.5	1.60–2.80
N4	0.2	7.87	8	0.222	8.75	0.800–1.40
N3	0.1	3.94	4	0.111	4.37	0.400–0.700
N2	0.05	1.97	2	0.0555	2.19	0.200–0.350
N1	0.025	0.984	1	0.0278	1.09	0.100–0.175