Surface Finishes

For plate, sheet, coil and strip

When ordering, it is important to specify surface finish to ensure it is appropriate for the application, even when appearance is not a factor.

Surface finishes can improve, or impair, corrosion resistance depending on the environment in which it is used. There are many finishes that can be used - mill, ground, brushed, polished, bead blasted, electropolished, coloured and patterned

Surface finishes for stainless steel sheet, coil, strip and plates are defined in standards ASTM A480 / A480M - 10 (tables 11 and 13) and BS EN 10088-2 (table 6) which uses a coding system for ex mill finishes - (1) for hot rolled (HR), (2) for cold rolled (CR), and "special finishes" to achieve specific aesthetic effects.

A 'special finish' usually involves close consultation with specialist finishers, as surface characteristics can vary, and the final acceptance of special finishes is often done by using agreed reference or control standard samples.

The definitions of surface finish do not express surface roughness achieved in terms of Ra values, however included in the below table is an indication of average Ra values where available.



HRAP 2D 2B No. 4 BA No. 8

Most common standard mill finishes

Finish No. ASTM A480	Finish No. EN 10088-2	Typical surface Ra (micrometres µm)*	Production route / remarks
0	1C	-	HR or CR, annealed, mill scale not removed, scale impairs corrosion resistance, generally used for heat resisting applications
1	1D	4.0 - 7.0	HR, annealed, pickled (descaled), used for corrosion and heat resisting applications
1	1E		HR, heat treated, mechanically descaled
–	1U		HR, not heat treated, not descaled
2D	2D	0.4 - 2.0	CR, annealed, pickled (descaled), matt, non-reflective finish
2E	2E	0.4 - 2.0	CR, annealed, surface blasted and pickled, after cold rolling, matt, non-reflective finish
2B	2B	0.1 - 0.5	HR, annealed, descaled, cold rolled, skin passed, most commonly used sheet and coil finish, bright, moderately reflective surface
–	2C		CR, heat treated, not descaled
No.4	No.4	0.2 - 1.0	CR, annealed, pickled (descaled), most common polished finish for catering and dairy equipment, grit polished to approximately 120 – 150 mesh
BA	2R	0.05 - 0.1	CR, bright annealed (in protective atmosphere), high reflective mirror-like appearance, but with some "milkiness" and not as reflective as No. 8 finish
No.8	2P	< 0.1	CR, annealed, pickled (descaled), mirror polished with very fine buffing rouges, the most reflective finish commonly produced on sheet (even finer finish is super or ultra No. 8
No.3	2G	-	CR, annealed, pickled (descaled), ground polished with specified grit one side only, unidirectional texture, not very reflective
No.6	2K	< 0.5	CR, annealed, pickled (descaled), finer satin polished, clean cut surface to achieve improved corrosion resistance for marine and architectural applications

* Ra in micrometres (formerly microns) NOTE: specifications do not guarantee a Ra value range.